Longview MPO Regional Thoroughfare Plan

Adopted by MPO Policy Board November 10, 2014

Real East Texas
CITY OF LONGVIEW
Metropolitan Planning Organization

Longview Metropolitan Planning Organization (MPO)

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EXECUTIVE SUMMARY

Executive Summary

As part of the Longview Metropolitan Planning Organization's (MPO) Metropolitan Transportation Plan (MTP) Update, the Thoroughfare Plan was created to provide policy guidance for the agencies within the MPO. The Thoroughfare Plan is a long-range plan that identifies the location and type of roadway facilities that are needed to meet the projected long-term growth in the region. The Plan serves as a tool for jurisdictions within the MPO to preserve future corridors for transportation system development.

The purpose of this Thoroughfare Plan is to provide consistency of roadway standards among the member cities, counties and agencies. The Thoroughfare Plan also includes information related to roadway classification, right-of-way requirements, and number of through travel lanes for each thoroughfare.

Thoroughfare Planning Process

The process of developing a thoroughfare plan for the region involves a number of important steps for implementation and thoroughfare recommendations. These steps are detailed in the document:

- Agency Coordination
- Data Collection
- Existing Conditions
- Public Involvement
- Technical Analysis
- Alternative Analysis

Technical Background

The regional travel demand model is the primary tool to evaluate transportation improvements into the future. It uses a series of mathematical equations to emulate human behavior. It does this by looking at existing demographic information as well as forecasted demographics along with characteristics of the transportation network to determine future trip patterns.

Model-based analysis was completed through the following steps during the thoroughfare development process:

- Ensured TPP model included up-to-date network recommendations
- Analyzed existing street network outputs
- Generated and tested transportation network alternatives
- Finalized recommended thoroughfare network system

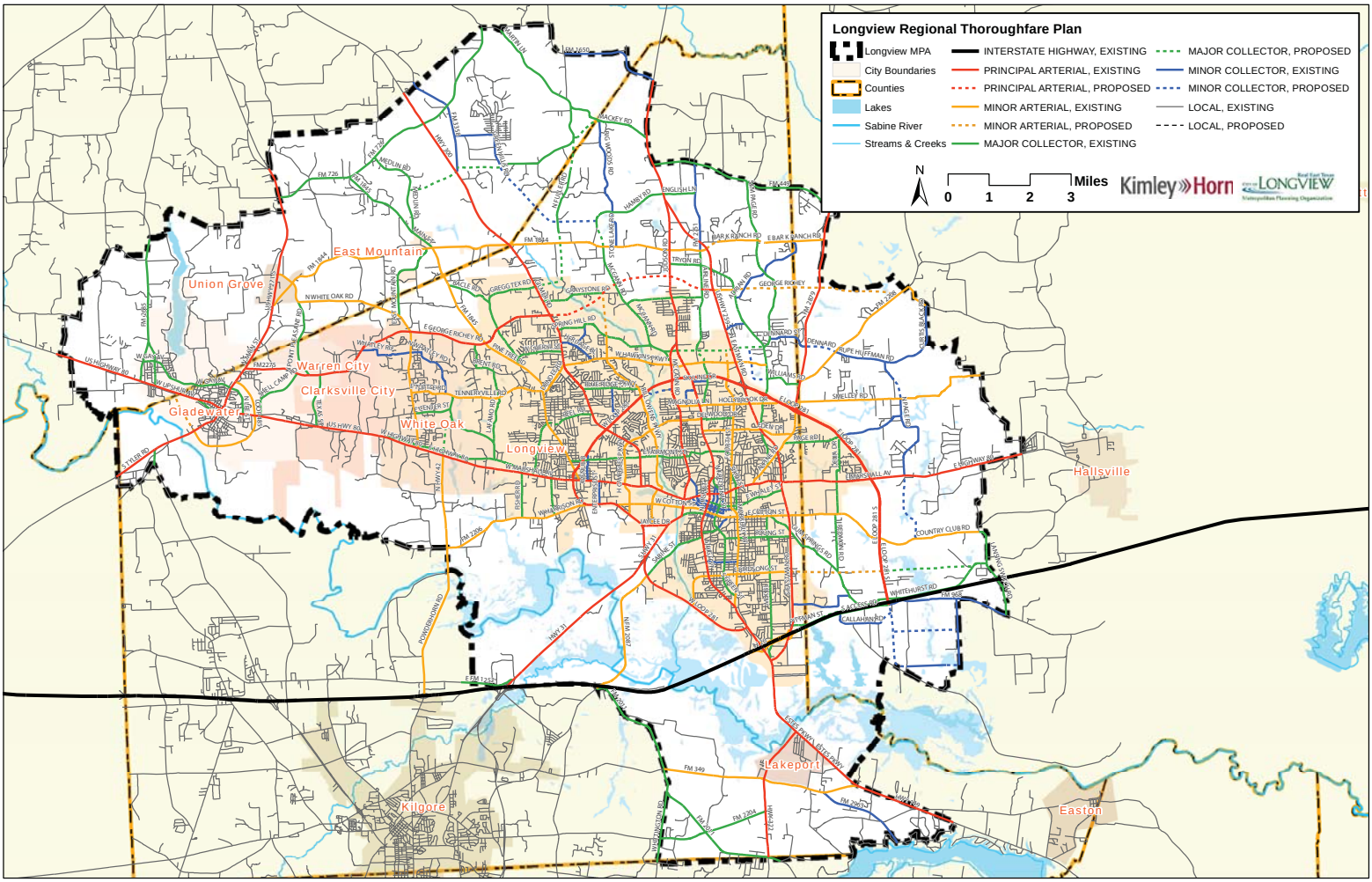
Thoroughfare Plan Development

Using the outcomes from the technical analysis, the design of the roadways vary based on a number of factors. These factors include functional classification, context and multi-modal street elements. The functional class refers to the characteristics and purpose of the street. The table of the following page summarizes the typical design of each functional class facility. Context of the surrounding land uses or development is another consideration for thoroughfare plan development. The last factor to consider is the street elements. The street elements establish which multi-modal elements are required to accommodate along particular corridors and thoroughfares.

Street Design Recommendations				
Functional Class	Principal Arterial	Minor Arterial	Major Collector	Minor Collector
Right-of-Way	120'	100'	80'	60'
Number of Lanes	4 or 6	2 or 4	2 or 4	2
Lane Width	12'	12'	12'	12'
Median	16' - 40'	16' raised or center turn lane	14' center turn lane, 2 lane option	none
Pedestrian Realm	16' - 18'	18'	16'	18'
Pedestrian Buffer	7' minimum	7' minimum	3' minimum	3' minimum
Sidewalk Width	5' minimum	5' minimum	5' minimum	5' minimum
Utility Location Width	15' minimum	15' minimum	15' minimum	15' minimum

Longview MPO Regional Thoroughfare Plan

The Longview MPO Regional Thoroughfare Plan consists of all major thoroughfares in the region by their assigned functional classification. This classification sets the required right-of-way to be acquired or preserved to accommodate future traffic demand in the region. The thoroughfare plan also identifies multi-modal elements to be considered along particular corridors in the region. It proposes alternative thoroughfare design elements to be incorporated in the retrofit or redesign as reconstruction is needed.



THOROUGHFARE PLANNING PROCESS

Thoroughfare Planning Process

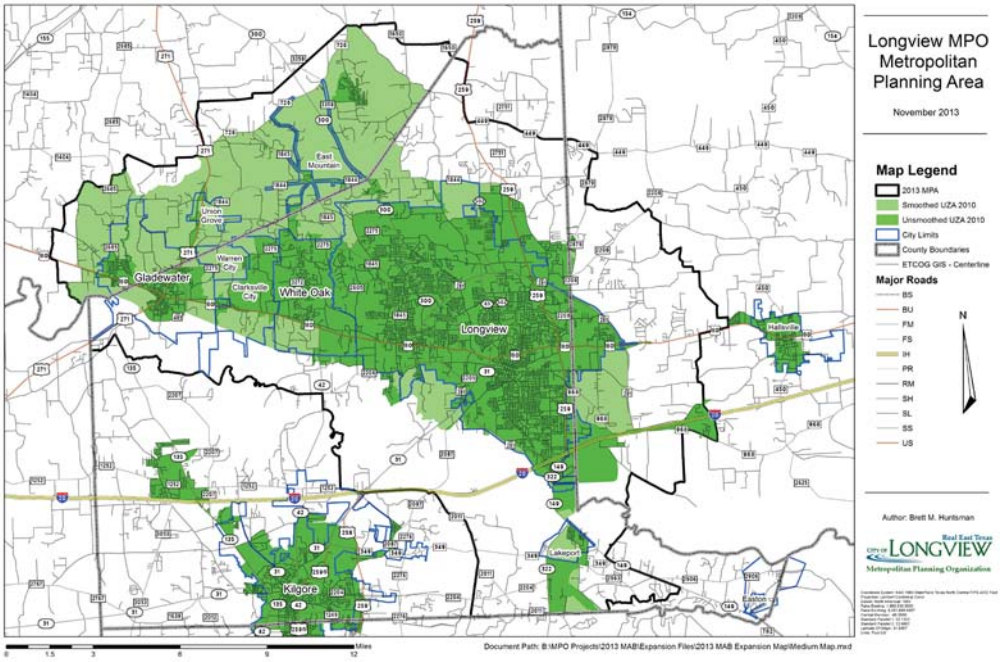
The process of developing a thoroughfare plan for the region involves a number of important steps for implementation and thoroughfare recommendations.

Agency Coordination

The Longview MPO covers the region around the City of Longview incorporating the cities of White Oak, Clarksville City, Warren City, Gladewater, Union Grove, East Mountain, Lakeport and Gregg, Upshur and Harrison Counties. The process of creating the Thoroughfare Plan involves continuous coordination with the member jurisdictions together with Texas Department of Transportation (TxDOT), East Texas Council of Governments (ETCOG) and North East Texas Regional Mobility Authority (NET RMA).

Many of these jurisdictions and agencies are represented on the MPO Technical Committee and the MPO Policy Board. Throughout the development of the Thoroughfare Plan, the Technical Committee and the Policy Board met to review the project status and the technical analysis in order to make recommendations for the future thoroughfare needs in the region. The Technical Committee convened on the following dates to discuss the results of the travel demand modeling efforts and to make recommendations to the plan:

- May 20th, 2014
- July 9th, 2014
- August 5th, 2014
- August 28th, 2014
- September 9th, 2014
- September 24th, 2014
- October 7th, 2014



Longview MPO Metropolitan Planning Area

The Policy Board met on the following dates to provide input and review the results of the thoroughfare planning process and make recommendations to the plan:

- May 20th, 2014
- July 16th, 2014
- October 9th, 2014

The project team and MPO Staff also coordinated with the City of Longview staff and the Longview Comprehensive Planning project team. The purpose was to coordinate the recommendations of the MPO Regional Thoroughfare Plan with the proposed thoroughfare recommendations in the Longview Comprehensive Plan. The coordination of the two planning efforts was essential to ensure consistency in the region between the two transportation planning documents.

Data Collection

The initial steps of the thoroughfare planning process included a detailed data collection effort to begin with the most accurate and up-to-date information. As part of the thoroughfare planning process, the following data was used to perform the technical analysis:

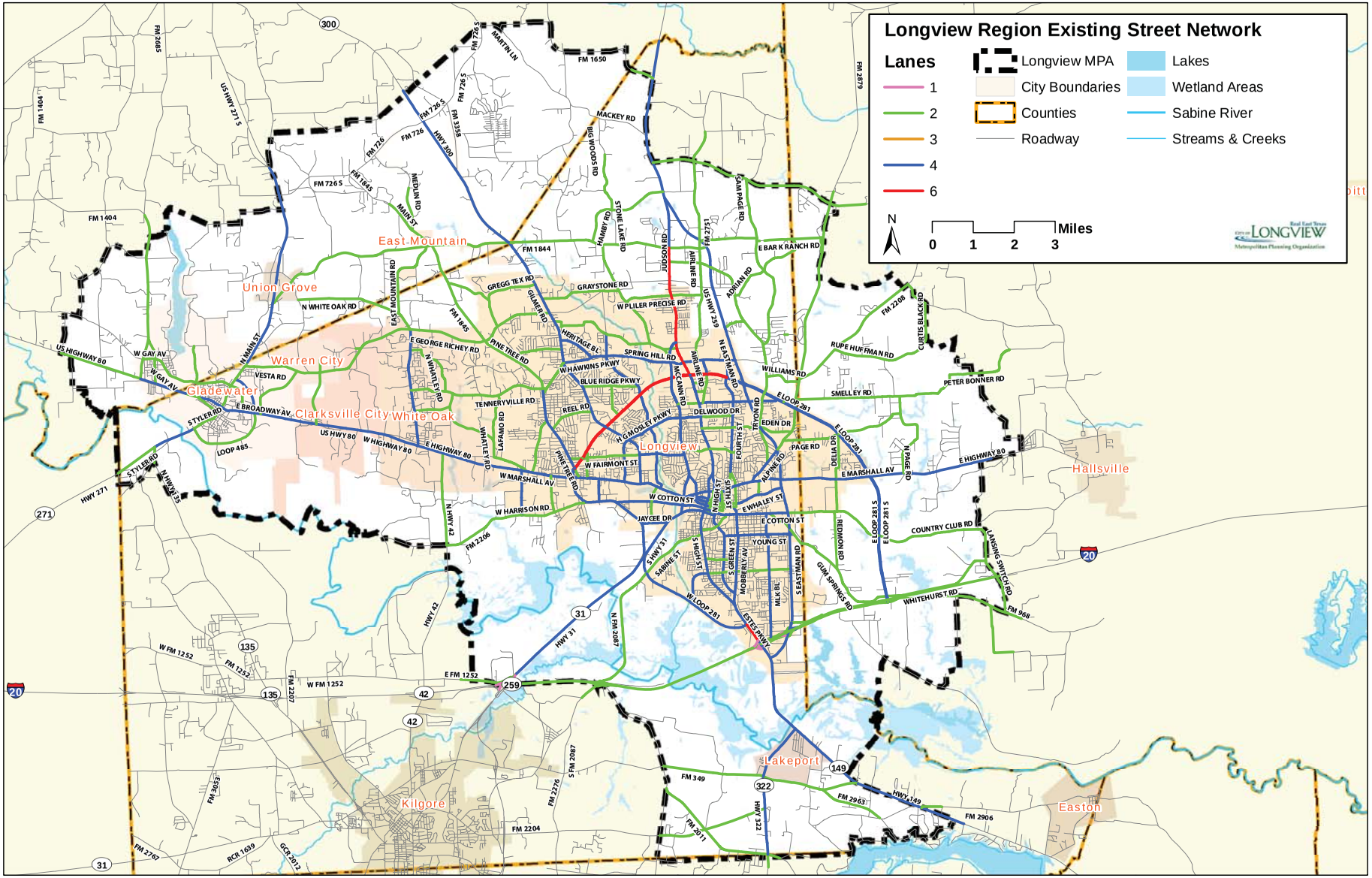
- Existing Roadway Facilities
- Traffic Counts
- Travel Demand Model Data
  - 2007/2040 Network
  - 2007/2040 Demographics
- Priority Corridors
- Regional Toll Analysis
- Existing Transit Routes
- Existing Railroad Lines
- Natural Features
  - Rivers/Creeks
  - Floodplain
  - Lakes
  - Wetland Areas
- Parcel Data
- Future Land Use
- Current Metropolitan Transportation Plan
- Current Transportation Improvement Program

Existing Conditions

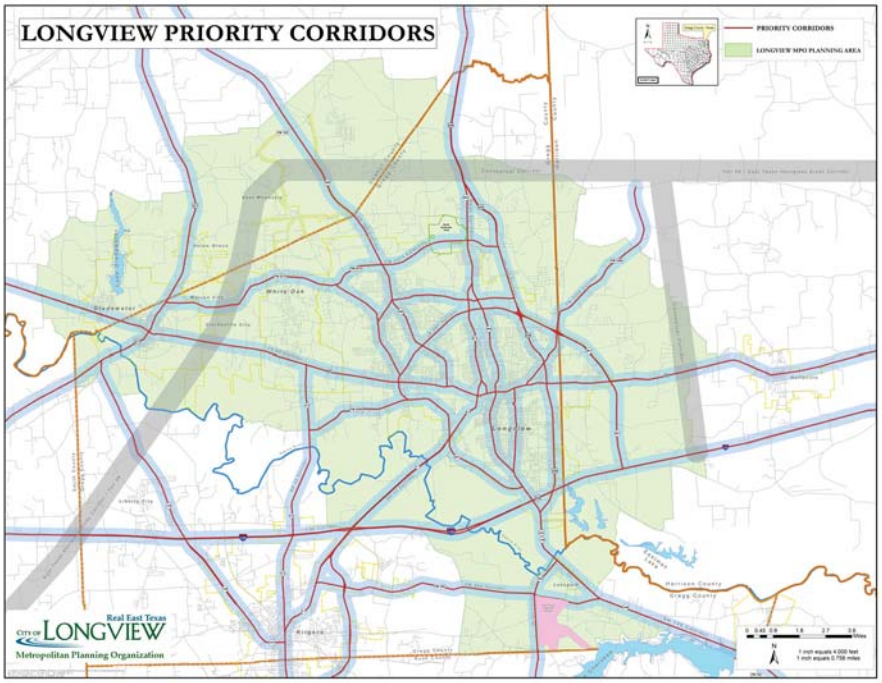
Currently, Longview's roadway network is comprised primarily of two- and four-lane roadways with some major corridors built to six lanes. Current traffic delay in the region is limited with the majority of the congestion located on Hwy 31, US 80, Loop 281 and Judson Road.

Interstate 20 (IH 20) passes through the southern portion of the Longview MPO boundary; It is a highly traversed corridor that provides connections and entrances into Longview. Hwy 271, Hwy 42, Hwy 31, FM 2087, Estes Parkway, US 259, and Loop 281 provide the primary access from IH 20 into the region. The primary barrier between IH 20 and the majority of the region is the Sabine River and surrounding floodplain which bisects the region from east to west. This barrier limits the ability to build new roadways or widen existing facilities to connect the region to IH 20. These corridors face a physical barrier – the river and floodplain – that limit their growth and development.

The City of Longview's underlying street network is built concentrically out from the downtown area. The transportation network is connected by Loop 281, three major east/west corridors, and two major north/south corridors. Direct arterials connect Longview to the surrounding communities. The Longview region is primarily an auto-centric location, meaning it is built mainly to support personal automobiles and transit. There are several transit lines throughout the city connecting the major activity centers. Sidewalks and bike facilities are not readily found throughout the region, with the exception of the



Map of the Longview Region's Existing Street Network



Map of Longview MPO Priority Corridors

off-system trail network that has been developed in the past decade.

An important aspect of future development rooted in the existing conditions is the possible toll road, Toll 49, and its potential alignment. Although the current planned route does not pass through the city limits of Longview, the effects of a toll road on the regional network needed to be evaluated as well. The impacts of Toll 49 are discussed in the Alternative Analysis portion of the thoroughfare planning documentation.

Public Involvement

A series of public involvement activities occurred during the planning process to inform residents of the thoroughfare planning events and needs from the public. The Longview MPO conducted a transportation survey in partnership with the Metropolitan Transportation Plan (MTP) Update to gather feedback on the mobility needs in the region. Over 350 surveys were completed and the results of those surveys can be found in the 2040 MTP Update documentation.

A public open house was held on July 16th, 2014 at the Longview City Hall to gather feedback and to share a presentation on thoroughfare planning basics. The presentation was broadcast on the City of Longview's Municipal Television station, CityView and was re-broadcasted many times and available on the City of Longview's website.

The presentation also provided information for residents to access the transportation survey to give additional feedback on the process.

Public hearings were also held September 11th, 2014 in the Longview City Council and on October 9th, 2014, and November 10th, 2014 at the Longview MPO Policy Board Meeting.

Technical Analysis

It is necessary that the development of a thoroughfare plan is based on a sound technical analysis to maintain objective recommendations for future mobility needs. The primary recommendations of a thoroughfare plan are number of lanes in the future and required right-of-way. The technical analysis that is conducted during a thoroughfare planning process works to identify those needs. The following section, Technical Foundation, goes into detail regarding the process involved from a technical perspective to create a regional thoroughfare plan.

Alternatives Analysis

Testing different corridor alternatives in the region is an important element of the transportation planning process. The Alternatives Analysis examines the change in forecasted traffic volumes as unique alignments of future roadways and the expansion of existing roadway capacity is altered. Within the Technical Foundation section, the process of the Alternatives Analysis is described in detail.

Longview MPO Public Open House

TECHNICAL ANALYSIS

Technical Foundation

The Longview MPO Regional Thoroughfare Plan was developed using several tools, including the Longview MPO's Travel Demand Model (Model) created by TxDOTs Transportation Planning and Programming Division (TP&P). The Longview MPO Model utilizes TransCAD 6.0 and runs the 4-step modeling process. The travel demand model forecasts trips in the region based on a number of factors. The primary method that trips are forecasted in the region is based on future projections of population and employment. These demographic projections helped to determine how many trips are going to be produced on a daily basis and where these trips are going.

The model was used to forecast trips that people take on a daily basis within and between the cities of Gregg and Harrison counties. This tool is a way of forecasting future trips, not predicting them. Therefore, the data provided by the model, along with expert technical judgment, was used in tandem to develop the Thoroughfare Plan.

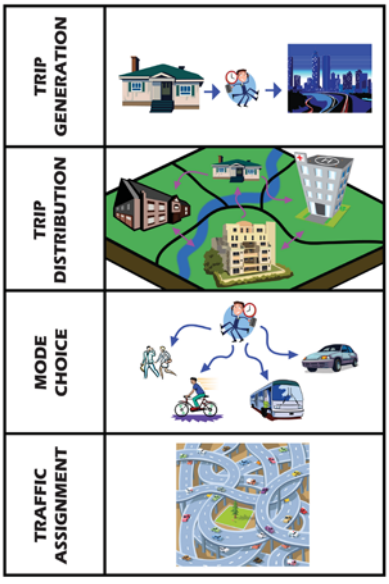
Model-based analysis was completed through the following steps during the thoroughfare development process:

- Ensured TPP model included up-to-date network recommendations
- Analyzed existing street network outputs
- Generated and tested transportation network alternatives
- Finalized recommended thoroughfare network system

Modeling Process

The Model is comprised of a series of mathematical models that simulate travel on the transportation system. The model divides the region into Traffic Analysis Zones (TAZs) which have specific demographic and land use data associated with them and are used to determine trip demand and travel patterns. The modeling process encompasses the following four primary steps:

- *Trip Generation* – the number of trips produced and attracted to a destination or zone.
- *Trip Distribution* – the estimation of the number of trips between each TAZ, i.e., where the trips are going.
- *Modal Split* – the prediction of the number of trips made by each mode of transportation between each TAZ.
- *Traffic Assignment* – the amount of travel (number of trips) that is loaded onto the transportation network through path-building and is used to determine network performance.



The model provides the City with an accurate tool to predict what the thoroughfare system will need to look like to accommodate future transportation needs.

Future Demand and Projected Congestion

The results that are outputted from the travel demand model assist in the development of a thoroughfare plan. Roadway capacity, traffic volumes, congestion and delay are all indicators that are used to compare alternatives and determine outcomes and recommendations of the thoroughfare plan.

Future Traffic Volumes

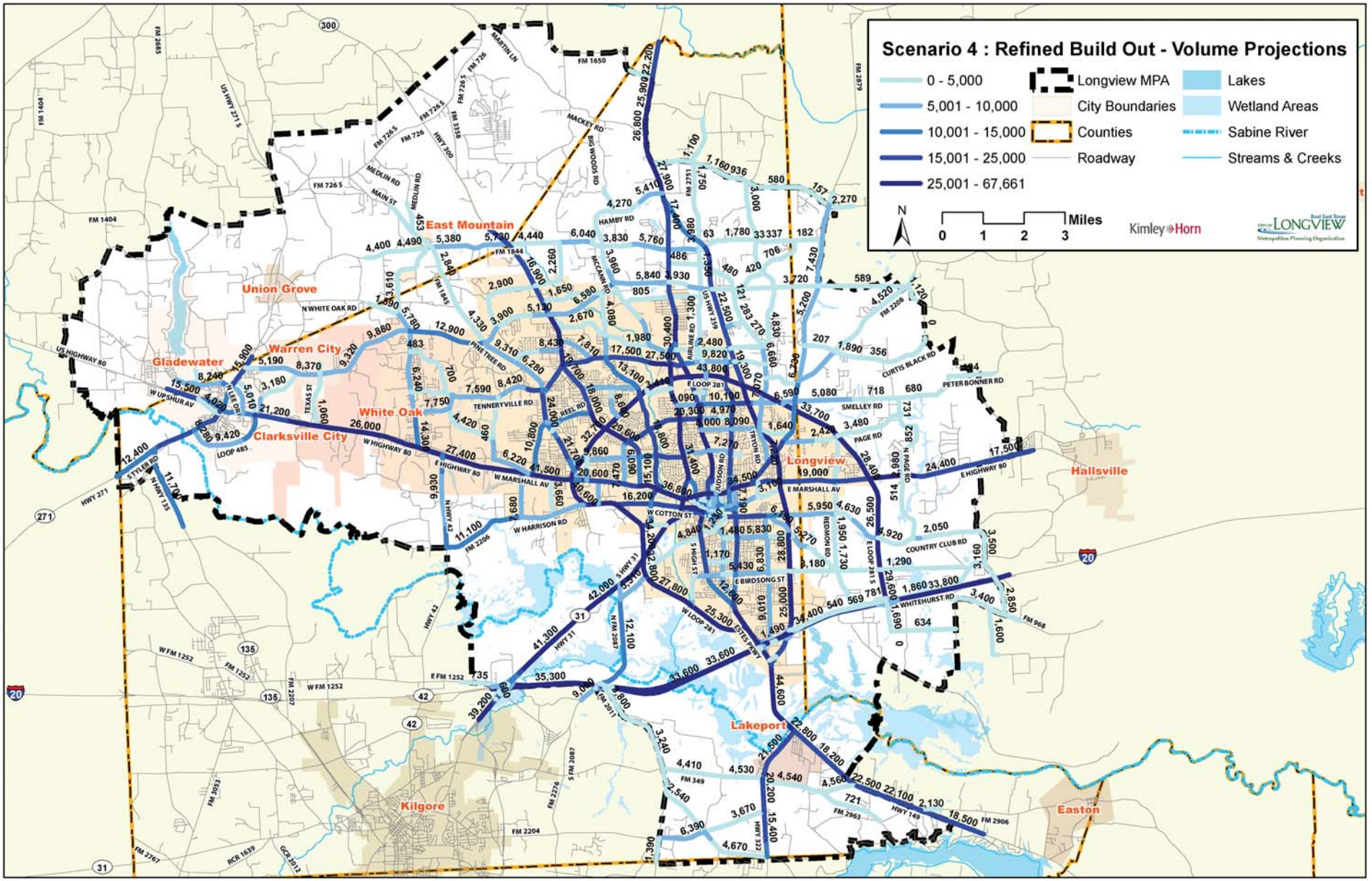
The Longview MPO travel demand model runs a 24-hour traffic assignment, which means that the forecasted model volumes are based on daily volume projections only. Traffic volumes show the "demand" on the thoroughfare network that is produced as a result of future growth and assigned trips. The more desirable a thoroughfare is based on capacity and speeds, the higher daily volume will be produced on the road. There is a clear connection between traffic volumes and travel time in most regional travel demand models. The faster the path, the more trips it will attract. This is evident when looking at higher functional classification roadways such as Interstates, or principal arterials, which have higher speeds.

Roadway Capacity

Each individual roadway or model network link in the travel demand model has an associated capacity assigned to it. The roadway capacity is based on the functional classification, the area type (urban, suburban or rural) and the number of lanes. The roadway capacity is the "supply" of the thoroughfare network, or the amount of available daily trips that could occur along any particular segment.

Traffic Congestion

Traffic congestion is a measure or an indicator that is analyzed as part of each model run or alternative analysis. It is also known as level-of-service (LOS) or Volume-to-Capacity ratio (V/C). LOS or V/C is a tool that is used to quantify traffic congestion along specific roadways and within the entire transportation network. LOS is calculated by dividing the traffic volume by the roadway capacity (V/C). Roadways are designated as LOS A - F. LOS A represents a roadway where traffic volumes are much lower than the capacity for that roadway and LOS F represents a roadway where traffic volumes are greater than the capacity of the roadway. LOS A roadways are free flowing while LOS F roadways are extremely congested. This indicator or measure helps to balance where the demand exceeds the supply to determine if additional capacity is needed, or if the demand is much lower than the supply and the capacity can possibly be reduced.



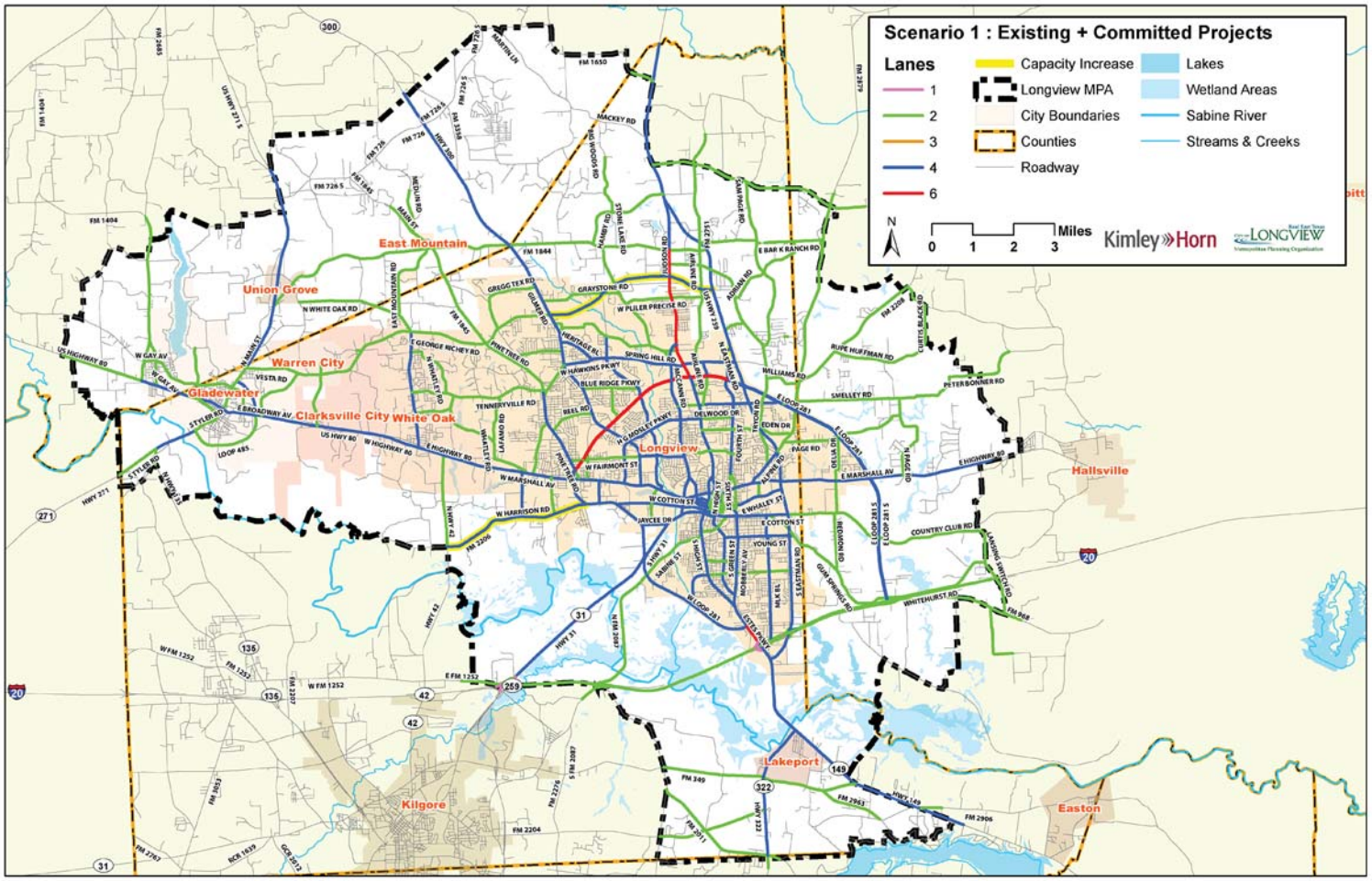
Map of Scenario 4: Refined Build Out - Volume Projections

Alternatives Analysis

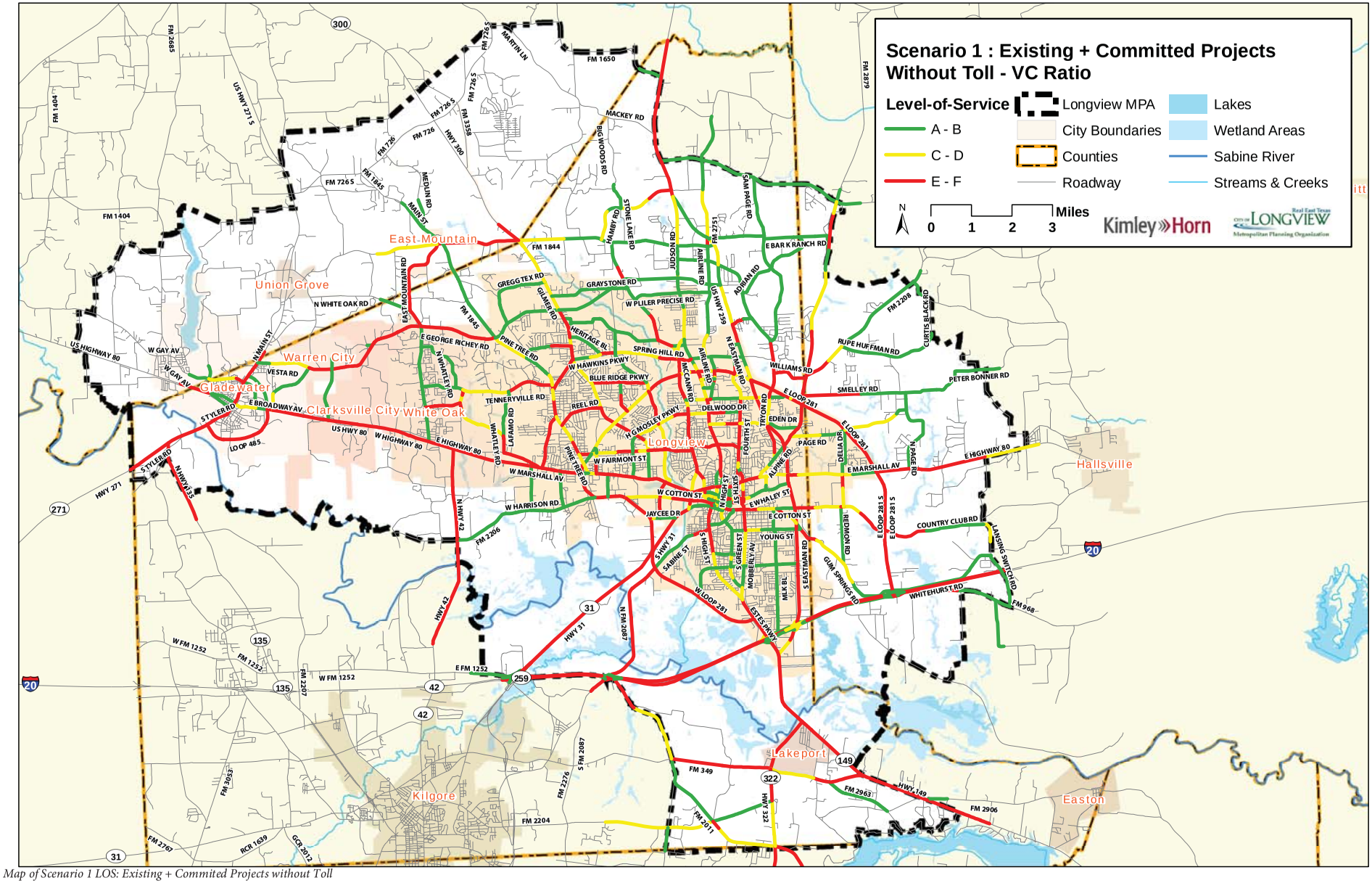
To analyze future traffic demand, four different transportation scenarios were developed using forecasted 2040 demographic assumptions. The purpose of these alternatives was to determine where the mobility needs in the region are and to make adjustments based on the volumes and congestion in each alternative. The indicators that are used to adjust each alternative include future volumes, congestion, and delay.

Scenario 1, Existing Network + Committed Projects

The initial alternative to test in the travel demand model is with the future 2040 population and employment projections on the existing network plus committed projects. This involves looking at what the impact on traffic volumes and congestion if the future development was using the roads that existing today. Committed projects, such as those roadway projects included in the MPO Transportation Improvement Program were also included. This gives a clear indication of where the congested areas in the region are located.



Scenario 1: Existing + Committed Projects



Map of Scenario 1 LOS: Existing + Commited Projects without Toll

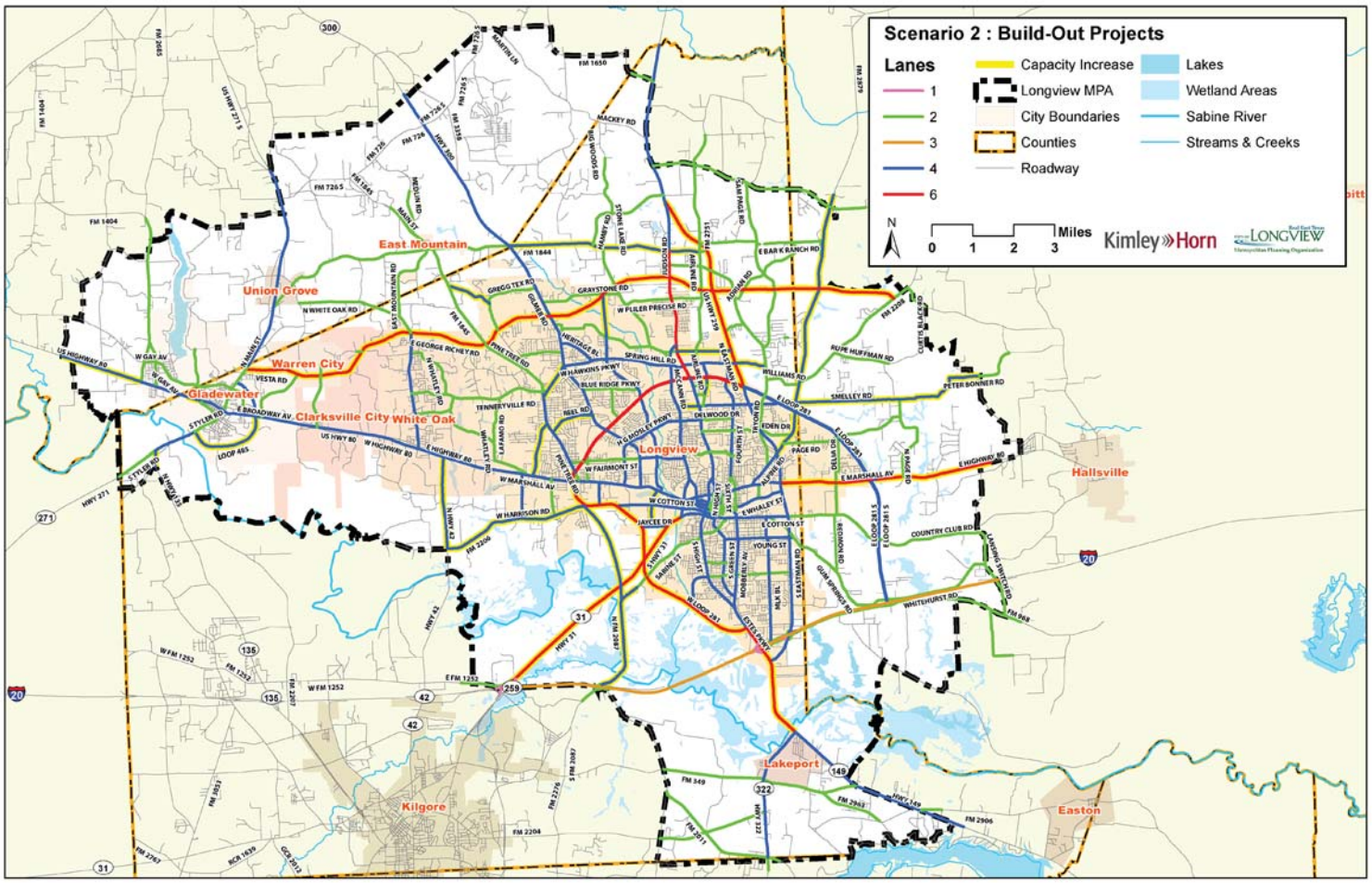
Scenario 2, Build-Out Network

The Scenario 2 network was developed with the assistance of the MPO Technical Committee on May 20th, 2014. During a work session with this group, they were challenged to include all of the roadway improvements that were necessary and reasonable to be completed in the next 25 to 50 years. The purpose of this scenario was to not be fiscally constrained.

The Build-Out alternative scenario showed noticeable improvements in congestions levels throughout Longview and the MPO region. However, some of the primary arterials and highways were still generating results of C-F for the congestion levels.

Toll 49 Analysis

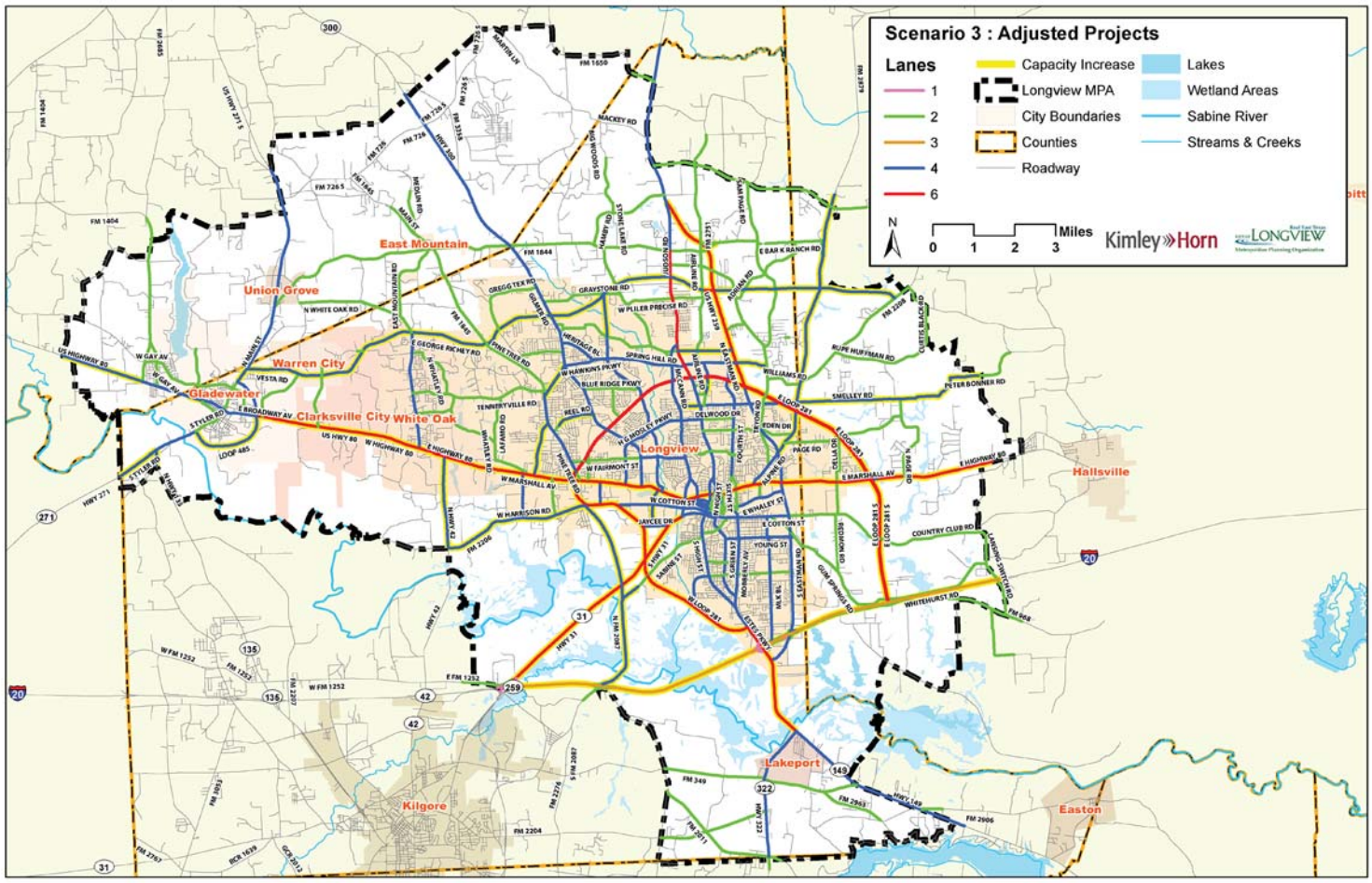
This model alternative included two analyzes; one version included the Toll 49 alignment through northern Gregg County and Upshur County that crosses US 80 near Clarksville City, and one version did not include the Toll 49 alignment. The results of analysis did not demonstrate a need based on model volumes for an additional facility north of IH 20 to connect to the Longview region, at least in the next 25 years. The volumes on the modeled toll facility ranged from the high of 12,900 vehicles per day (vpd) to a low of 4,400 vpd. There were no changes in the regional congestion levels when comparing the Toll 49 model run with the model run that excluded the Toll 49 extension.



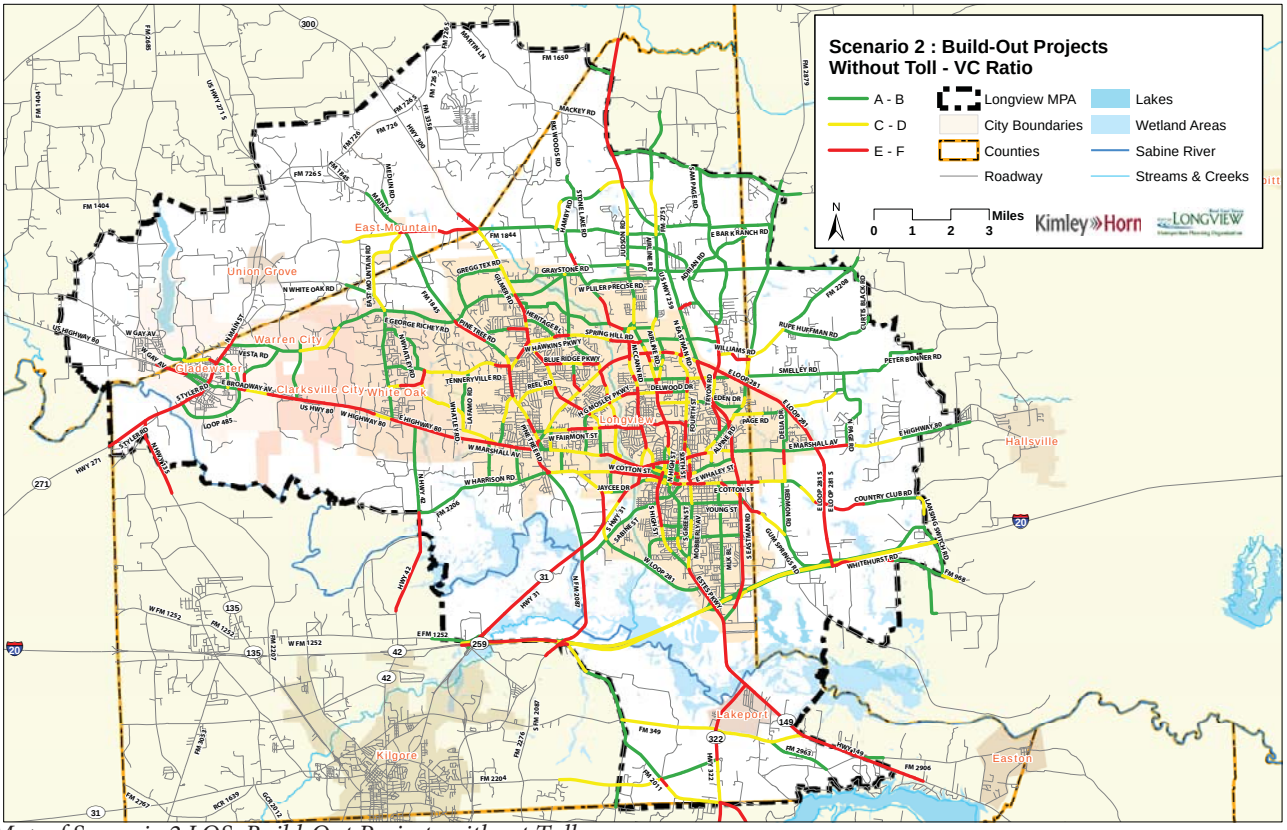
Scenario 2: Build-Out Projects

Scenario 3, Adjusted Build-Out Network

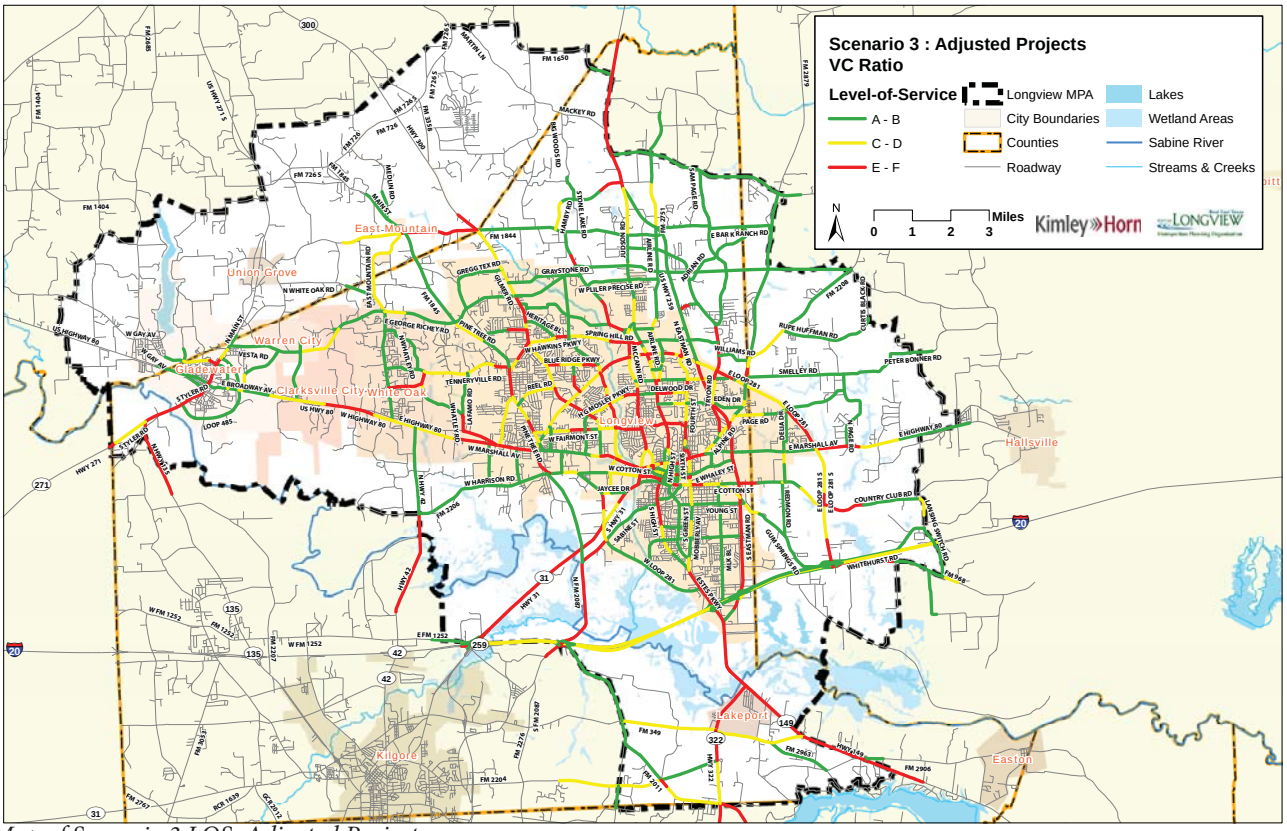
After completing Scenario 2 and showing all of the potential improvements to the roadway network in the region, the 3rd scenario was used to adjust the roadways that may need to be improved further or scaled back, it was easy to see that some corridors did not need the added capacity as modeled in the build out and vice versa. From Scenario 2 to Scenario 3, greater improvements in congestion levels can be seen. Enhanced LOS can be seen on the highways and other major corridors. Toll 49 was not modeled in this scenario due to the lack of volumes produced in the previous scenario.



Scenario 3: Adjusted Projects



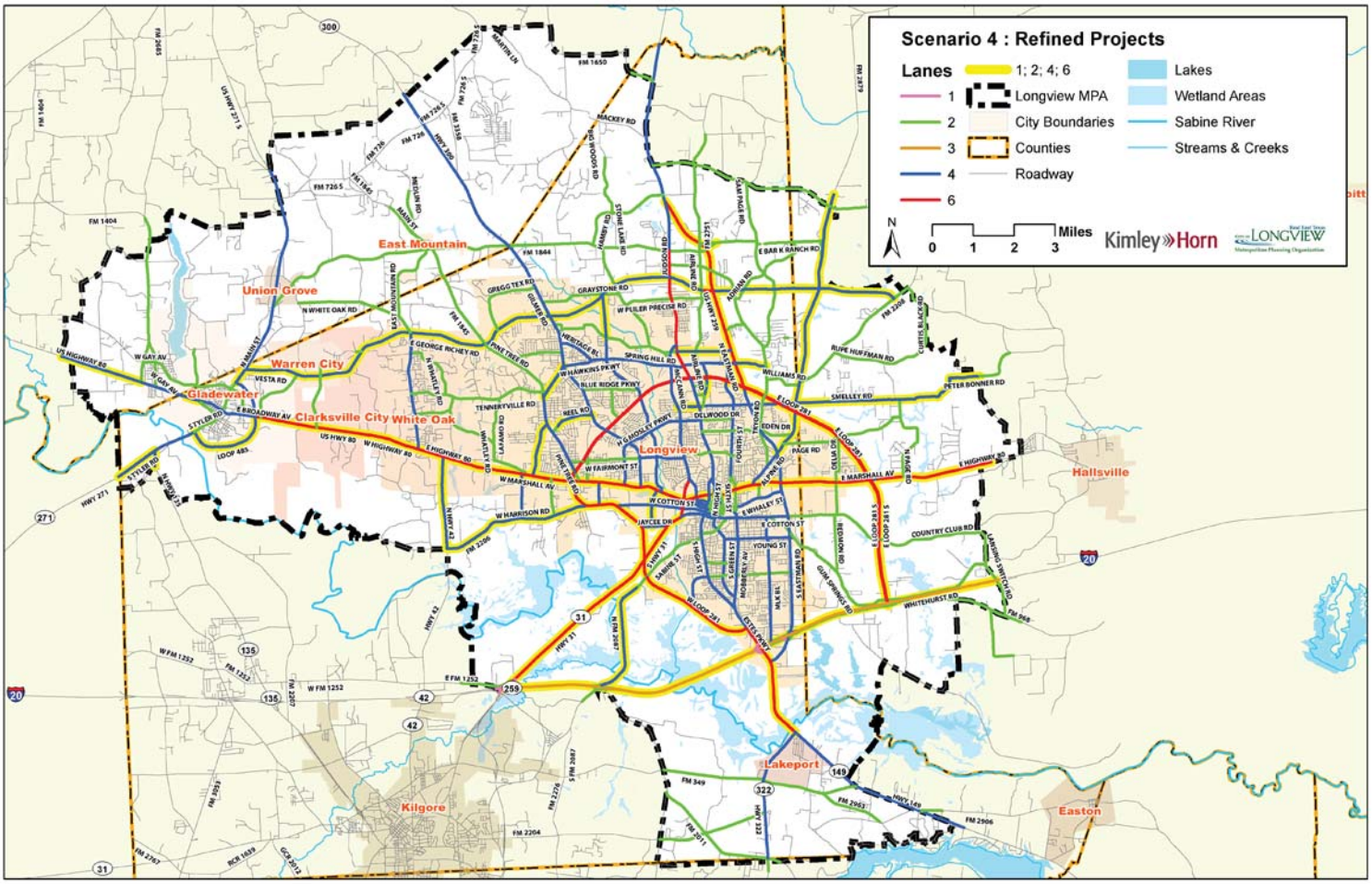
Map of Scenario 2 LOS: Build-Out Projects without Toll



Map of Scenario 3 LOS: Adjusted Projects

Scenario 4, Refined Build-Out Network

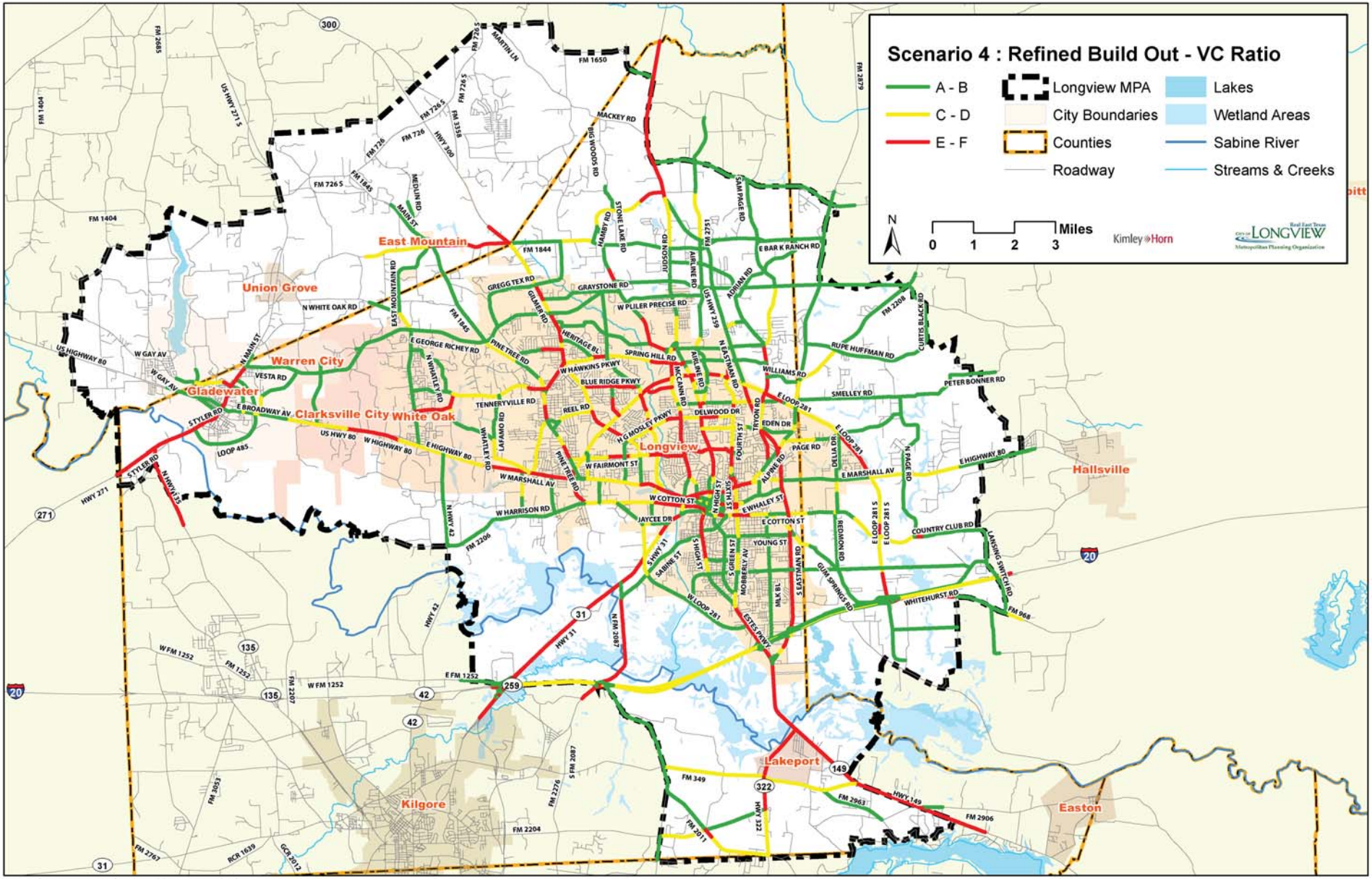
Following the review of the Adjusted Build-Out network, a few roadways in the region were modeled with additional capacity to determine the comparison with Scenario 3. The results of this model alternative showed improvements along those corridors and resulted in better traffic performance. Toll 49 was not modeled in this scenario. The Proposed Regional Thoroughfare Plan map is based on the number of lanes modeled in this scenario.



Scenario 4: Refined Projects

The comparison of these four alternatives created a process to develop a comprehensive thoroughfare plan for the Longview region. Using indicators of regional vehicle miles traveled (VMT), vehicle hours traveled (VHT) and delay the thoroughfare plan was able to be refined to reflect the best possible scenario to improve the region's future traffic concerns.

	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Vehicle Miles Traveled (VMT)	7,738,351	7,701,113 (-0.5%)	7,685,665 (-0.7%)	7,684,653 (-0.7%)
Vehicle Hours Traveled (VHT)	287,345	261,775 (-10%)	258,269 (-11%)	258,980 (-11%)
Delay	96,718	72,229 (-35%)	69,242 (-40%)	69,928 (-38%)
Lane Miles Added	26.43	331.12	264.04	255.69



Map of Scenario 4: Refined Build Out - Level-of-Service/Congestion

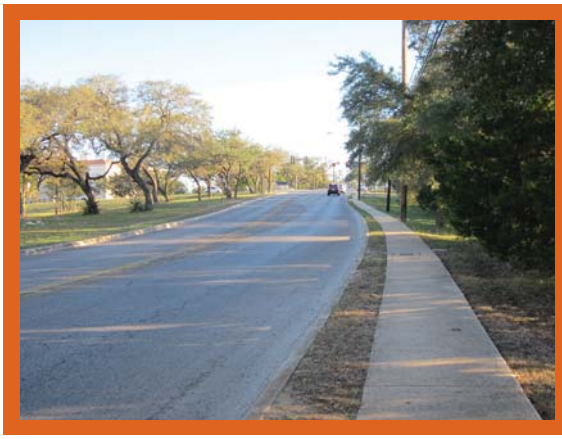
THOROUGHFARE PLAN DEVELOPMENT

Thoroughfare Plan Development

The process of developing a thoroughfare plan involves balancing the existing supply of infrastructure with the projected needs of the future. These future needs help to determine how much vehicle capacity is required and what multi-modal elements should be considered such as walking, biking or riding transit. Included in each roadway recommendation is also the amount of required right-of-way that is needed as the thoroughfare is developed. Preserving the right-of-way is an important part of the plan for the regional entities such as the cities and counties as well as the residents, business owners and developers.

The type of street designed either as a new build or an existing retrofit is determined by a number of factors. The street type or functional classification is one factor to consider. The street type refers to the characteristics and purpose of the street. Another factor to consider is the context of the surrounding land uses or development. The last factor to consider is the street elements. The street elements establish which multi-modal elements are required to accommodate along particular corridors and thoroughfares.

Recent trends in thoroughfare planning practices have provided opportunities for greater flexibility in thoroughfare design. This new trend better complements surrounding land uses by creating different thoroughfare standards based on the users of the facility and the surrounding context or land use. This new practice is known as Complete Streets or Context-Sensitive Design. The Context Sensitive Solutions (CSS) Design Manual, written by the Institute of Transportation Engineers and the Congress for the New Urbanism, provides a guide on how this emerging practice can be implemented during the thoroughfare planning process. Opportunities for multi-modal corridors that advance economic development and create a safer, more efficient transportation system arise when the context of a roadway is taken into account during the planning and design processes. The context-sensitive approach has been adopted by the Texas Department of Transportation (TxDOT) and has already been successfully implemented in thoroughfare planning processes in other cities and MPO's across the State of Texas. This Plan advances the concept of thoroughfare planning within the Longview MPO by taking advantage of context sensitive design while satisfying the mobility needs of Longview and surrounding towns/communities.

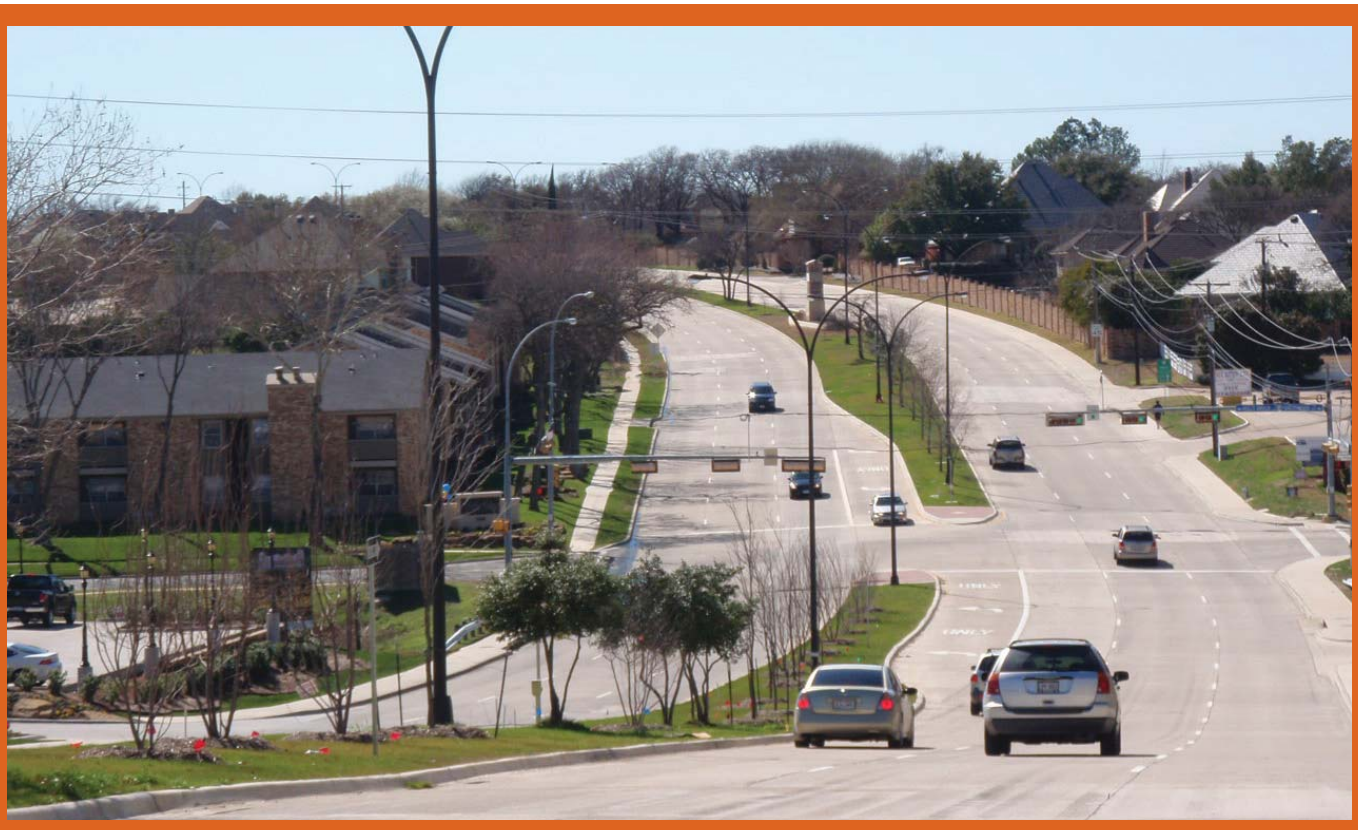


Street Types/Functional Classification

Most cities use a traditional functional classification system to group roadways according to the type of service they are intended to provide. This organized system assists citizens and developers in understanding the types of roadways that are planned for the region's transportation system and how those roadways may be designed. The street types or functional classification in the Longview region identifies thoroughfares as Principal Arterial, Minor Arterial, Major Collector, Minor Collector, and Local streets. Interstate Highway 20 is not classified as a thoroughfare in the region but serves as important role in moving traffic into and through the region.

Historically, street classification systems have been rigid and uncompromising, allowing little to no flexibility in the implementation of the roadways. Street design characteristics have typically been limited to the area from curb-to-curb and focused solely on accommodating vehicle traffic. This concept of rigidity has evolved over time as the relationship between transportation and land use has become more influential in the design and operation of our streets. Thoroughfare design practice has begun to involve a number of different design considerations that often include the streetside area (located between the building front and the curb) and that affects not only automobile users, but also pedestrians and cyclists.

Complete Streets or Context-Sensitive Design is a relatively new term defined by an old concept: streets should be planned for the modes that will be using them. Applying this concept to the Longview Regional Thoroughfare Plan is necessary to develop a network that is efficient and well-connected. Complete Streets have many elements that are factored into the design of the street. The details of those elements are specified in the Street Design Elements section.



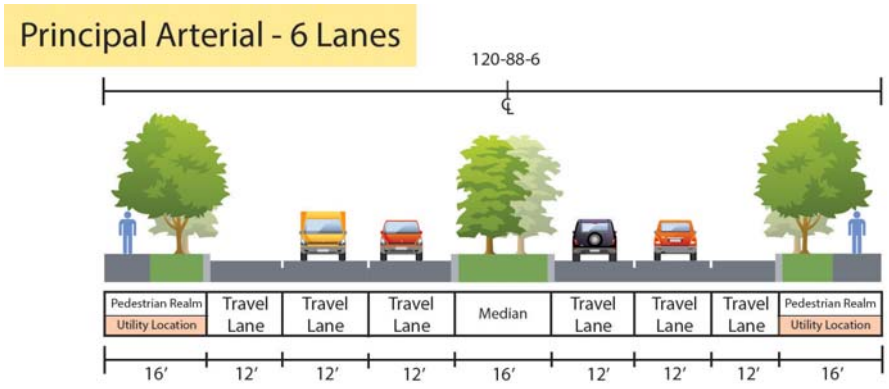
Principal Arterial – 120’ of required right-of-way

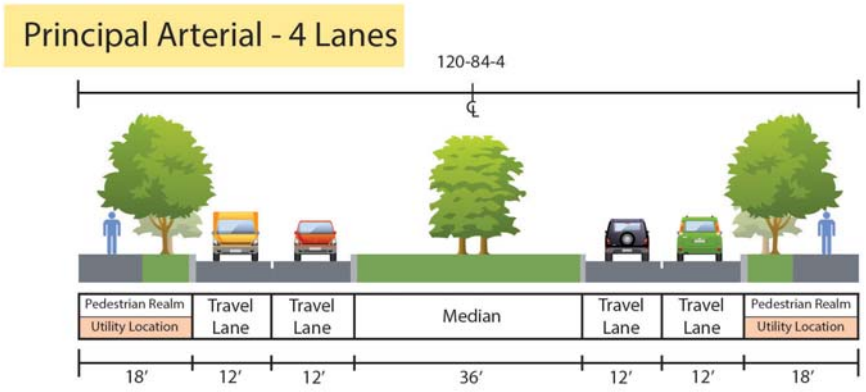
Principal Arterials focus on moving regional traffic. These types of thoroughfares typically carry the highest amounts of traffic and also have the highest speeds depending on the context environment. The number of lanes range from four (4) to six (6) depending on the current and future demands and the potential development. Examples in the region of Principal Arterials are:

- US 80 (Marshall Avenue)
- US 259 (Eastman Road)
- Judson Road
- HWY 300 (Gilmer Road)
- HWY 31
- Loop 281

For thoroughfares only requiring four (4) lanes of travel, additional space is preserved in the median to provide the expansion to six (6) lanes if needed. The typical cross section for this street type is shown below.

Principal Arterial - 6 Lanes





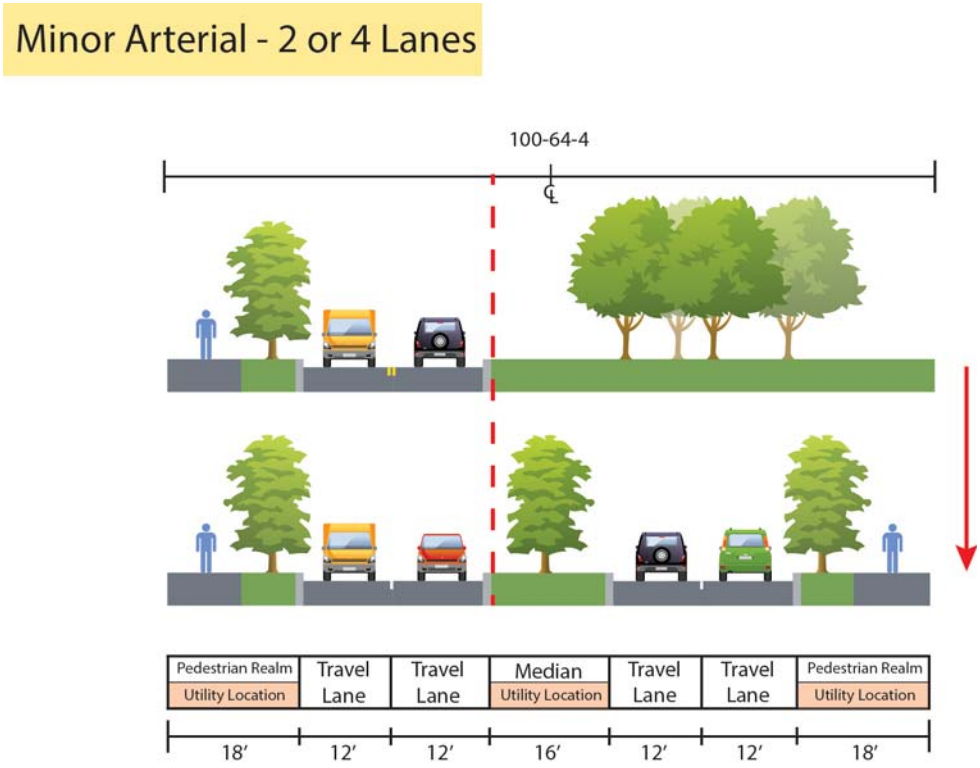
Minor Arterial - 100’ of required right-of-way

Minor Arterials focus on moving intra-regional traffic. These types of thoroughfares carry high volumes of traffic and also have relatively high speeds as well. The number of lanes range from two (2) to four (4) depending on the current and future demands and the potential development. Center turn lanes may be incorporated in areas that access is required, but raised medians are preferred. Examples in the region of Minor Arterials are:

- Bill Owens Parkway
- Hawkins Parkway
- Pine Tree Road
- Cotton Street
- FM 1844
- Loop 485
- Mobberly Avenue

For thoroughfares only requiring two (2) lanes of travel, additional space is preserved on one side of the thoroughfare to provide the expansion to four (4) lanes if needed. The median can be a center turn lane if needed. The typical cross section for this street type is shown below.

Minor Arterial - 2 or 4 Lanes



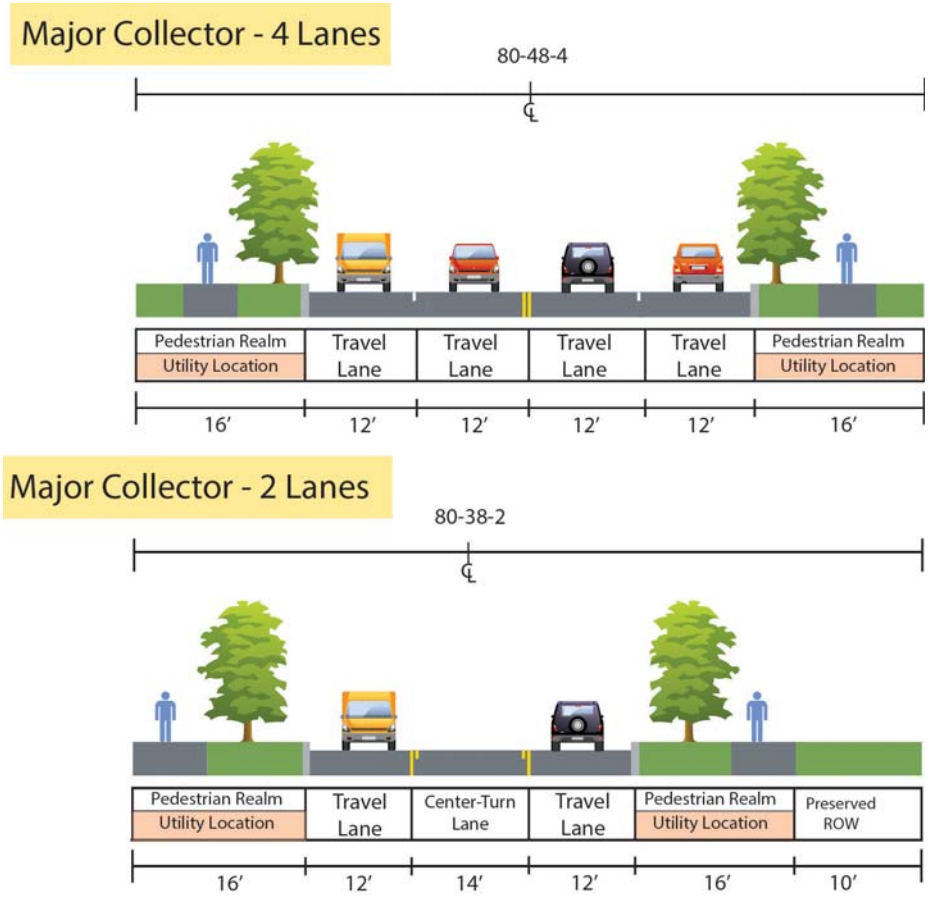
Major Collector – 80’ of required right-of-way

Major Collectors focus on moving traffic between neighborhoods and different areas within the city. These types of thoroughfares carry moderate volumes of traffic and have lower speeds to accommodate access to adjacent properties. The number of lanes range from two (2) to four (4) depending on the current and future demands and the potential development. Center turn lanes may be incorporated on Major Collectors, but raised medians are rarely found on these types of streets. Examples in the region of Major Collectors are:

- Green Street
- Fairmont Street
- Spring Hill Road
- FM 449
- Gay Avenue
- MLK Boulevard

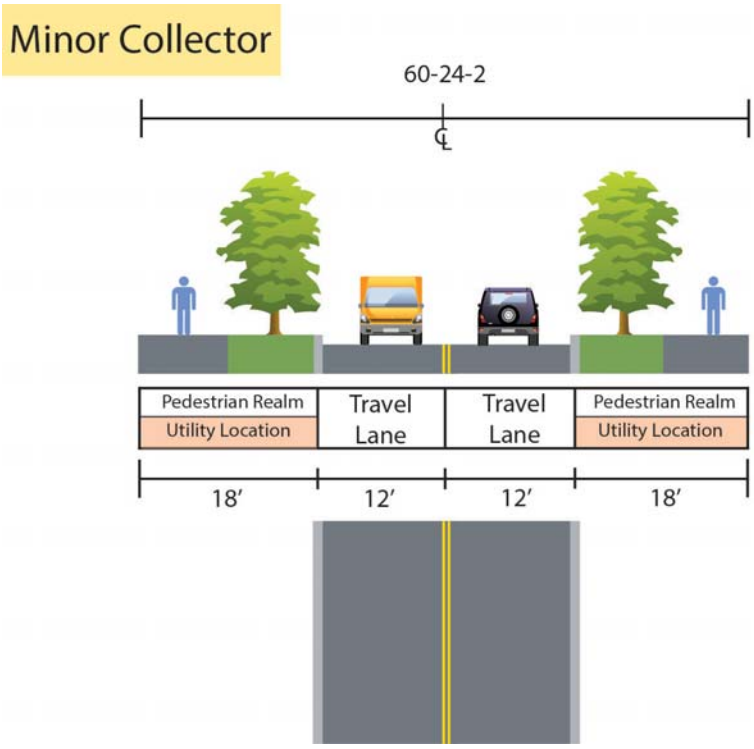
Two variations of a Major Collector can be used; a four (4) lane undivided roadway or a two (2) lane roadway with a center turn lane. The graphic below demonstrates the possible thoroughfare considerations for the Major Collector street type.

Major Collector - 4 Lanes and 2 Lanes



Minor Collector – 60’ of required right-of-way

Minor Collectors focus on moving traffic between different areas within the city. These types of thoroughfares carry low volumes of traffic and have low speeds to accommodate access to adjacent properties and neighborhoods. Only two (2) lanes of traffic are required for this street type. In certain context types additional street elements can be considered such as wide sidewalks, bike lanes and parking. The graphic below demonstrates the thoroughfare considerations for the Minor Collector street type.

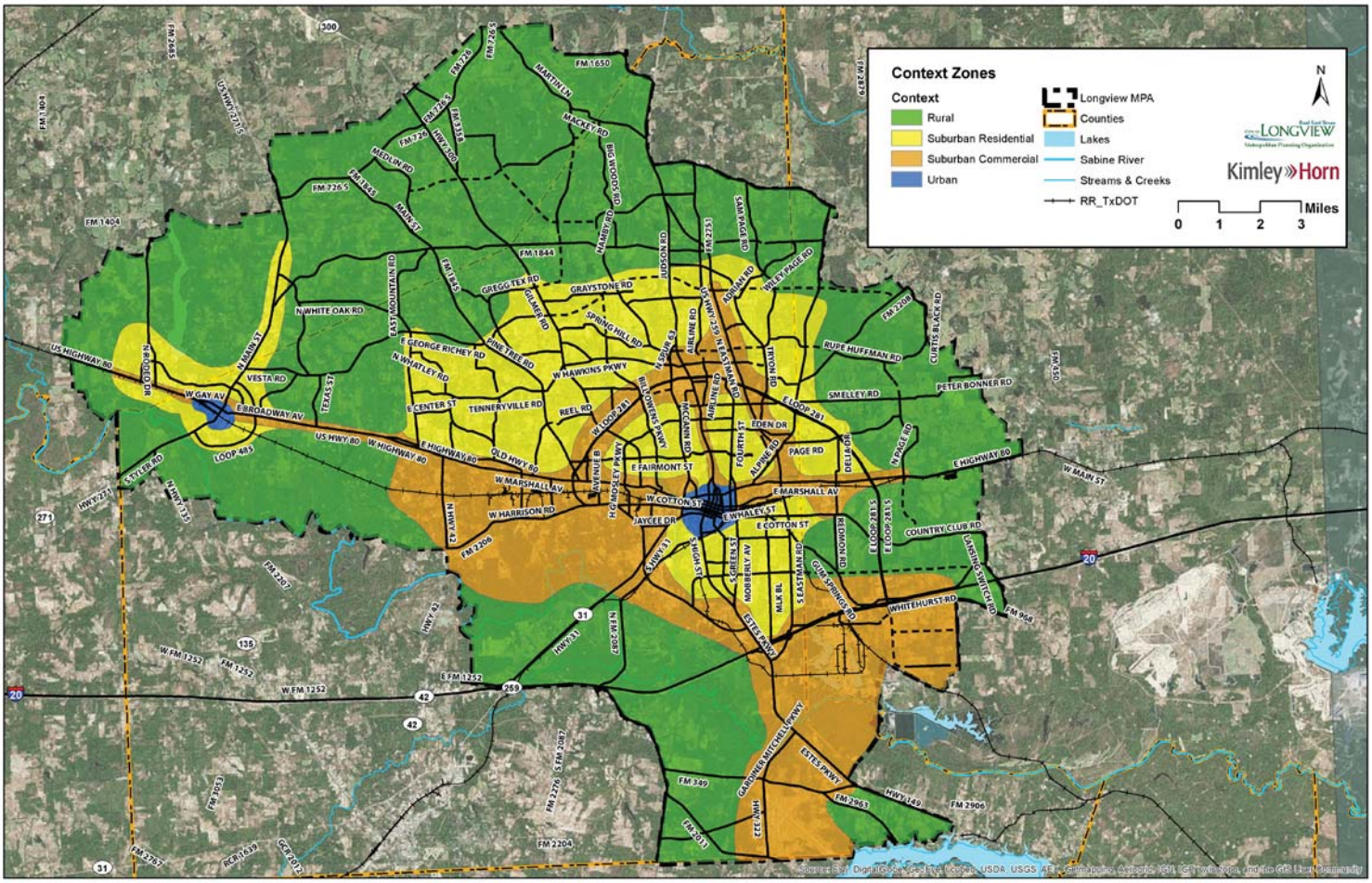


Local Streets – right-of-way not required

Local Streets are typically not designated on a thoroughfare plan because it is a street type that does not require right-of-way dedication. As new development occurs, local streets are typically preserved and built by the developer and once the development is complete, the city takes over maintenance and ownership of the right-of-way. Local streets are focused on providing access to homes in residential neighborhoods where speeds are less than 30 miles per hour (mph) and traffic volumes are the lowest. In most cases lane striping is not implemented and on-street parking occurs in a variety of locations depending on the surrounding uses and building types.

Regional Context Types

Along with the more flexible functional classification design standards, the character of the area adjacent to the roadway (street context) will play an important role in the way a street looks. One type of street design will not satisfy all of the different needs within the MPO boundaries. Therefore, it is important that the standards incorporate design elements to provide flexibility for differing types land use characteristics. The Longview MPO region has at least four (4) different context types; Rural, Suburban Residential, Suburban Commercial, and Urban.



Rural

Rural areas comprise a large portion of the area in the Longview region. The uses on these properties can range from agricultural to estate residential to industrial. Rural roadways typically have higher speeds and limited access. Primarily users of rural roadways are automobile and truck traffic; however, where improved shoulders are present, increased levels of bicycle use may be observed.

More increasingly recreational cyclists are riding in rural locations for long distance, high speed training and exercise. Rural facilities tend to be the best suited for this type of roadway use. Ensuring that bicycle accommodation is included where safe cycling can occur in the rural areas important to maintain safe corridors for all users.

Although rural roads are typically two lanes, they can function as arterial, collectors or locals depending on the characteristics of the roadway. It is also important to accommodate truck traffic and safe passing areas on these roads to promote safety along rural corridors. Sidewalks are not typically located in rural areas due to long distances between destinations and the low cost benefit.

Suburban Residential

Suburban Residential areas typically contain both suburban homes (single family, multi-family, mobile homes) and some neighborhood-scale commercial uses. Access to suburban neighborhoods from the arterial networks is primarily through the collector and local network of streets. Homes will typically front on local streets with some cases of communities having collectors with homes fronting.

Suburban development can be served with public transit, but the routes normally are located on arterial streets. Bicycle use occurs in suburban development for commuting and also leisure use. Off-street trails or hike and bike trails allow for recreational users to travel through suburban style development with a clear separation between vehicle traffic and bike use. On-street bicycle use is primarily best located on the collector network of street because of the slower speeds and lower volumes. In some cases principal arterials and minor arterials include bicycle infrastructure but will include a buffer to protect the bicycle users from vehicle traffic.

Pedestrian accommodation is also important in this context. Sidewalks are typically found in suburban residential to provide pedestrian access for those that live in the surrounding neighborhoods. Pedestrian use can be either for commuting or for leisure. When walking in a suburban residential context, it is primarily to walk to a transit stop, or for walking to school.

The size or capacity of the thoroughfares in a Suburban Residential context varies from two lanes to six lanes depending on the functional class of the roadways. The speeds and volumes of the roadways will be higher on principal and minor arterials and lower on major and minor collectors.

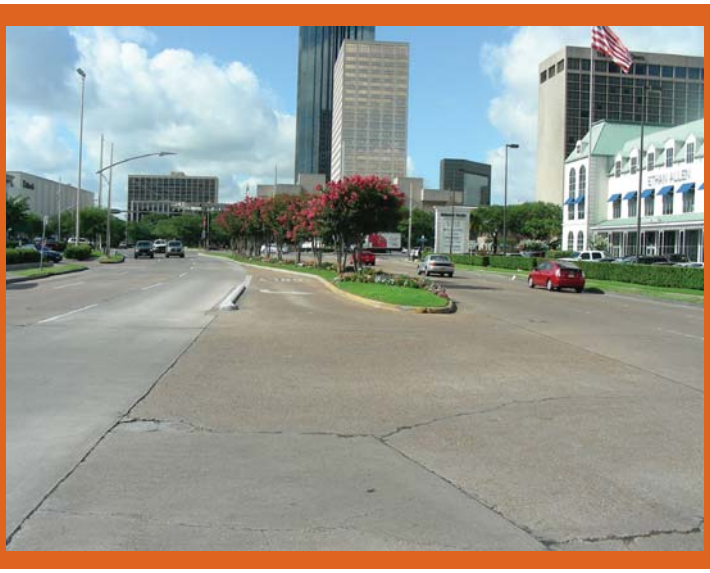
Suburban Commercial

Suburban Commercial areas typically contain land uses that are predominately commercial or industrial. In some cases multifamily residential may be located in a suburban commercial location. Because of the nature of the businesses that front on both arterials and collectors, access to adjacent properties is typically frequent. Volumes on Suburban Commercial roadways are higher than most other roadways because of the nature of the trips, but speeds will vary between different functional classifications. On the high end, principal arterials carry the majority of the traffic and have high speeds, with minor collectors having low speeds and lower volumes.

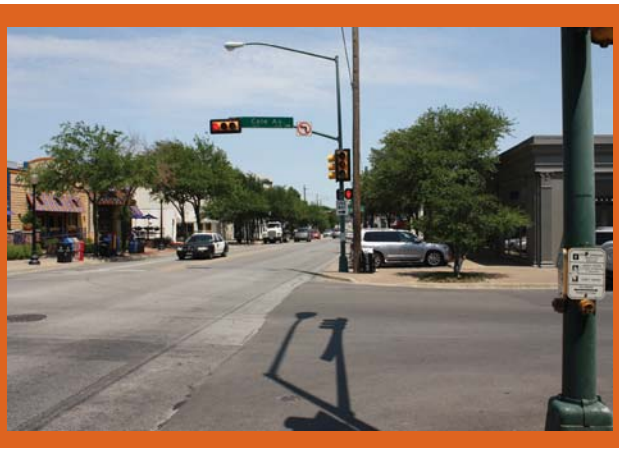
Transit service in these areas can be located on all thoroughfares including arterial and collectors depending on the destinations, with transit stops being located on minor arterials and collectors to allow for safe boardings and alightings on lower speed facilities.

In the Suburban Commercial context bicycle use is typically limited to off-street facilities or collector thoroughfares. This is a result of the high potential for conflicts on arterials with high volumes, speeds and number of driveways. If arterial corridors have good access management, bike amenities can be implemented with a buffered bicycle facility.

Pedestrian accommodation is not always considered in Suburban Commercial areas because of the automobile nature of the land uses, however many pedestrian users still need to access businesses by walking. It is important in this context type to incorporate safe pedestrian access from the adjacent residential neighborhoods to the commercial areas.



The size or capacity of the thoroughfares in a Suburban Commercial context varies from two lanes to six lanes depending on the functional class of the roadways. The speeds and volumes of the roadways will be higher on principal and minor arterials and lower on major and minor collectors.



Urban

Urban context zones are comprised of a variety of types of land uses and activity centers with a significant economic generator purpose. The variety of land uses in this context types accommodates a number of different modal uses such as vehicles, transit, pedestrian and bicyclists. In this context type it is sometimes difficult to differentiate between arterials and collectors since the volumes and speeds are much more closely ranged. The speeds on arterials in an urban context can be low even with high volumes. Conversely collectors with low speeds can also produce higher than average volumes.

Transit service can be provided on most urban thoroughfares and because of the slower speeds; transit stops can be more frequent and be located on both arterials and collectors. Many transit users will find their origin or destination in urban areas because of the activity centers that are located in urban areas. Higher residential and commercial densities in this context area allow for a higher attraction for both choice and dependent transit riders.

Bicycle users in urban areas are more frequent due to the type of development and context. The purpose for increased bicycle ridership is due to both choice factors of people wanting to bike to work or school and also because of the proximity of neighborhoods with lower vehicle ownership. This reduces the choice of modes for some users who are limited by income and can only walk, bike or use transit. Bicycle infrastructure can range from bike lanes along corridors with additional right-of-way, to shared lanes where speeds are low.

Pedestrian accommodation is important in urban contexts. Higher volumes of pedestrian users in urban context usually warrants additional pedestrian accommodations such as wider sidewalks, pedestrian furniture and a higher level of landscaping along the corridor.

Because of the type of development in urban areas, on-street parking can be accommodated along particular roadways. Different types of parking can be implemented such as parallel parking, angled parking and reverse-angled parking depending on the need of the surrounding business and the available right-of-way.

The size or capacity of the thoroughfares in an Urban context varies from two lanes to four lanes depending on the functional class of the roadways. The speeds and volumes of the roadways are typically lower than those in other context types.

Street Design Elements

As mentioned previously, street design has historically focused only on the area located between the curbs and has centered design criteria on the personal vehicle. Emerging practice places emphasis on other aspects of the street in addition to the travel way. For example, pedestrian and bicycle infrastructure is being implemented more frequently in neighborhoods to encourage healthy living and exercise, and in more commercial locations to spur increased economic development.

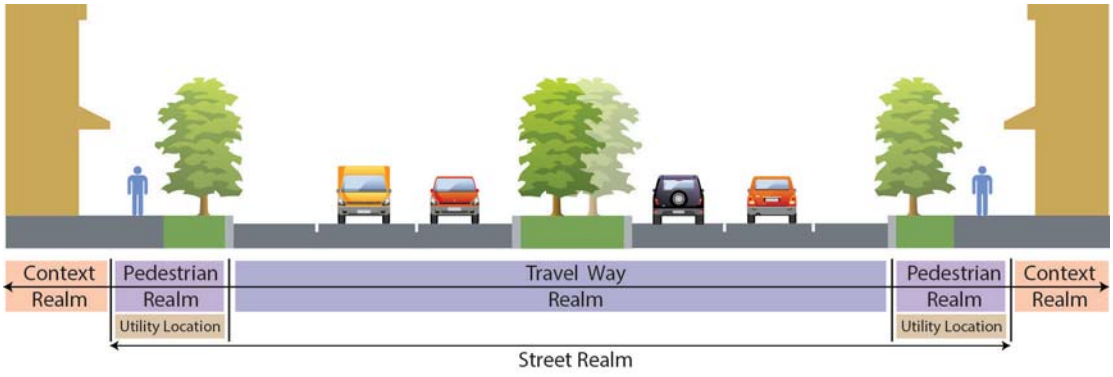
When planning future thoroughfares, it is essential to identify all aspects of the corridor in order to maximize efficiency of the roadway system and the value of the surrounding property. There are three important elements of the street that need to be considered when designing a new thoroughfare or retrofitting an existing thoroughfare. These elements are the travel way realm, the pedestrian realm and the context realm.

The pedestrian realm is typically identified as the area from the edge of right-of-way to the back of curb to the travel realm. This area may provide any of the following characteristics: landscaping/ buffering, sidewalk, pedestrian scaled lighting, seating, etc.

The travelway realm is the portion of right-of-way situated between the curbs or edge of pavement. This area may provide for bike facilities, on-street parking, travel lanes, and or medians.

The context realm consists of the adjacent land uses and development types.

Through the public involvement process in developing the Thoroughfare Plan, it was evident that an increased desire for alternatives modes of transportation within Longview important to the participants. Transit alternatives were discussed, especially as they related to activity centers such as hospitals, clinics, shopping centers, colleges, and the airport to the south. Pedestrian facilities, namely sidewalks within neighborhoods, were also a point of discussion. Many neighborhoods within Longview do not have any sidewalks. The same can be said for many of the commercial areas.



Street Element Design View

Utilities

Utilities are an important element within the thoroughfare right-of-way. The ability to access both underground and overhead utilities is one of the key factors in maintenance and reconstruction. The location of utility infrastructure is typically within the pedestrian realm of the thoroughfare. This is to limit the impact on the travelway if any maintenance or reconstruction is needed.

Underground utilities are more common in dense, more urban areas and in newer suburban areas. When paired with other streetscape elements, overhead utilities can create a cluttered visual environment. Common utilities in the pedestrian zone include utility poles, and overhead wires, surface-mounted utility boxes, utility mains, laterals, vaults, and valves. Also included are sewer, water, gas and telecommunications, as well as traffic signals, street lights, and electrical poles and wires.

When planned for, well placed utility design can reduce long-term maintenance conflicts and potential costs due to the efficiency and integration with other elements of the pedestrian zone.

Access to utilities for maintenance and emergencies is the higher priority, but minimizing the disruption to pedestrian through travel and other elements (street furnishing, etc.) is also necessary.

Incorporating Cyclists

Bicycle Facility Types

Bikeway is the universal term for various types of bicycle facilities, for both on- and off-road facilities. Other bikeway facility types include Bike Lanes, Buffered Bike Lanes, Cycle Tracks, Shared Use Paths, etc. Bike routes are not considered infrastructure; but are referred to as wayfinding treatments.

When planning for bicycle facilities, the needs of all bicyclists should be addressed. Roadway treatments should accommodate existing bicyclists and encourage those who would like to bicycle but choose not to, due to lack of existing designated facilities. The two key categories of bicycle facilities can be described as either on-street or off-street. The two primary on-street bicycle treatments include on-street signed routes (bike route signage with or without shared lane markings on the pavement), and bike lanes (bike lanes, buffered bike lanes, etc.).

Off street shared use paths (frequently called multi-use trails) are the most durable type of hard-surface, all weather facilities. Off-street facilities can be located along greenways, utility corridors, abandoned or sometimes active rail lines, and/or alongside streets, as in sidepaths.

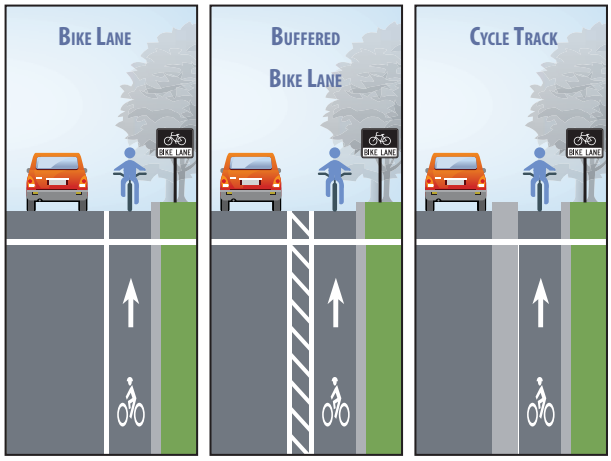
Bikeway Facilities By Class

Class I Bikeways - Shared Use Paths / Off -Street Multiuse Trails

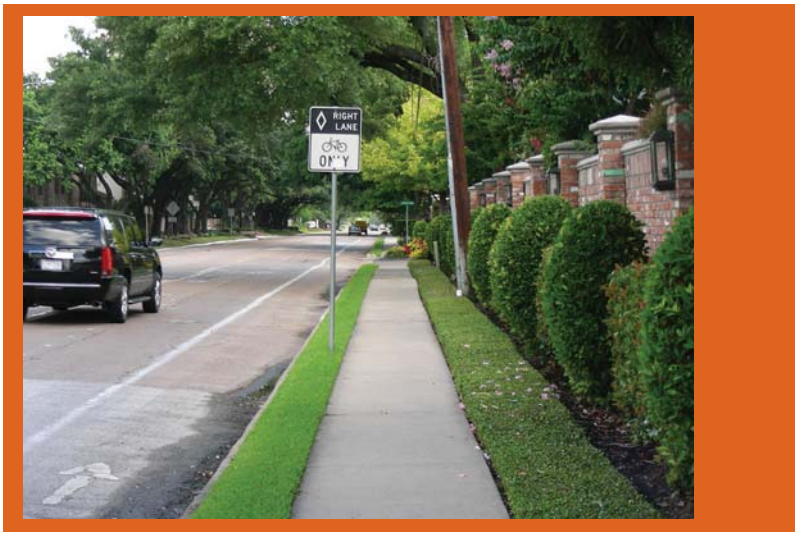
Class I Bikeways were once typically called bike paths – now referred to as shared use paths, recognizing multiple types of users (pedestrians, skaters, etc.). A Class I Bikeway provides for bicycle travel along a paved right-of-way that is completely separated from any street or highway. Shared use paths can be used to connect corridors not otherwise served by streets; or where sufficient right-of-way exists, constructed away from the influence of parallel streets. Shared use paths should offer access opportunities not provided for bicyclists by the road system. They can also provide recreational opportunities, and in many instances, can serve as alternative commute routes if cross flow by motor vehicles and pedestrian conflicts can be minimized. Class I facilities can also be utilized to close gaps to bicycle travel caused by freeways or other infrastructure, or the existence of natural barriers (rivers, hills, etc.). Examples of Class I Bikeways include shared-use paths and sidepaths.

Class II Bikeways - Bike Lanes, Buffered Bike Lanes, And Cycle Tracks

Class II Bikeways are typically infrastructure that is configured as bike lanes, buffered bike lanes or cycle tracks. A Class II Bikeway provides a striped and stenciled lane for one-way travel in each direction along a street or highway. Bike lanes are established along streets in corridors where there is significant bicycle demand and where there are distinct needs that can be served by them. The purpose of these should be to improve conditions for Group B and C bicyclists in the corridors. Bike lanes are intended to delineate the right-of-way assigned to bicyclists and motorists, and to provide for more predictable movements by each. Class II Bikeways can be configured along an uphill direction as climbing lanes with a shared curb lane going downhill where the speed differential between motorists and bicyclists is much less.



Bicyclists, by State law, are allowed the use of all public roadways accept limited access highways and may fully occupy lanes of less than 14 feet to help ensure safe passing by motor vehicles. But even this can be inadequate where speed differentials are extreme, such as along freeway frontage roads. People riding bicycles are likely to travel to the same destinations as motorists;



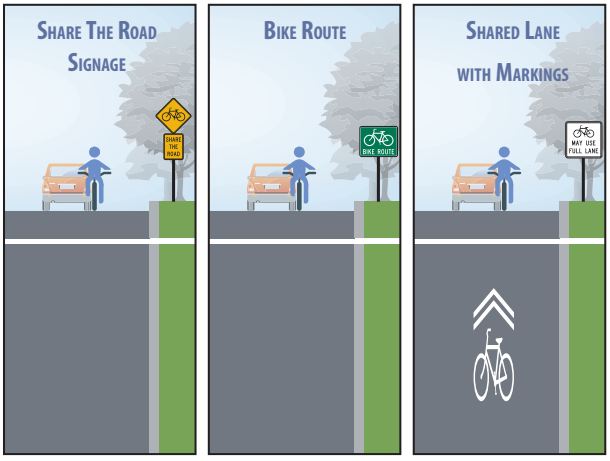
therefore, accommodating bicycle travel along all public roadways must be a guiding principle. Finding dedicated space for bicycles along collectors and arterials can be challenging. Reducing the number of lanes (road diet) and/or lane widths (lane diet) are often inexpensive options when done concurrently with roadway restriping.

Bike lanes and barrier separated cycle tracks create a higher sense of safety along high-speed high-volume roads for most users. For detailed design guidance, refer to the AASHTO Guide for Bicycle Facilities.

The importance of safety in protecting vulnerable users such as bicyclists and pedestrians is even more important on high volume high-speed roadways. Creating separated spaces, buffers, and improved safety marking for these users helps to protect them as they travel. It is imperative that proven safety countermeasures be established to maintain the level of safety these users need (refer to the FHWA Proven Safety Countermeasures for guidance).

Class III Bikeways – Bike Routes / Wayfinding

Class III Bikeways, generally referred to as bike routes, provide for shared use of road space with motor vehicle traffic. These are typically identified by signage and/or pavement markings – referred to as wayfinding rather than as infrastructure. Bike routes are typically shared facilities which serve either to: 1) provide continuity to other bicycle facilities, usually Class II Bikeways; or 2) designate preferred routes through high demand corridors. As with bike lanes, designation of bike routes should indicate to bicyclists that there are particular advantages to using these routes as compared with alternative routes. Normally, bike routes are shared with motor vehicles. Use of sidewalks as Class III Bikeways is strongly discouraged. Examples of Class III Bikeways include: signed bike routes, shared lane markings (SLM's), and paved shoulders.



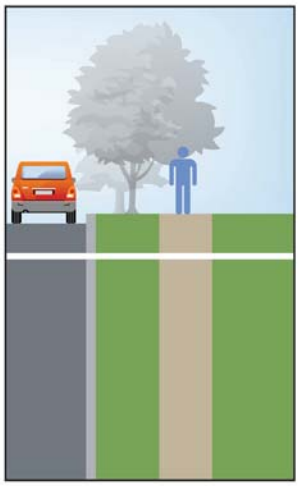
Many slow speed neighborhood streets with speeds of 30 MPH or less can be fairly easy routes for residents to access nearby destinations. One strategy many cities use to promote bicycling and walking is to establish local destination wayfinding by using small scale signage at key decision points. Some cities utilize small markings on the pavement, others use locally-relevant graphics with standard signage described in the Manual on Uniform Traffic Control Devices (MUTCD).

Pedestrian Amenities

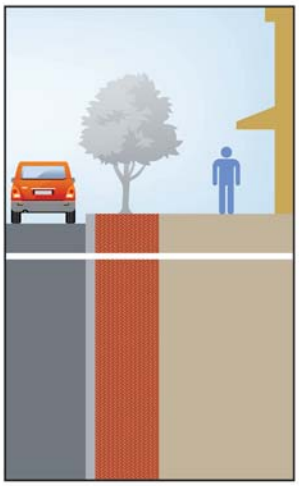
As a tool, pedestrian enhancements become the primary transportation element that connects all travel modes. Key destinations, increased pedestrian amenities and well-planned pedestrian connections promote walking as a viable form of transportation. People want to walk in an environment where they can feel safe, particularly along roadways with higher traffic volumes. Street-side safety in areas where most travel is by vehicle is achieved by adequately separating pedestrians from other modes of travel. Safety, comfort and convenience are all factors that will influence whether someone chooses to walk along a corridor.

The "pedestrian zone" is the area intended for pedestrian travel and should be free of obstacles. Sidewalks in this zone should be a minimum of 5 feet, and at least 6 feet where a furniture zone buffer is not present. Creating a continuous sidewalk system by connecting gaps in the sidewalk network is critical along many of the thoroughfare corridors. This ensures that locations along each corridor are accessible to all pedestrians, especially those with disabilities. Other measures to increase pedestrian safety include marked crosswalks, roadway lighting, intersection design, and signal enhancements.

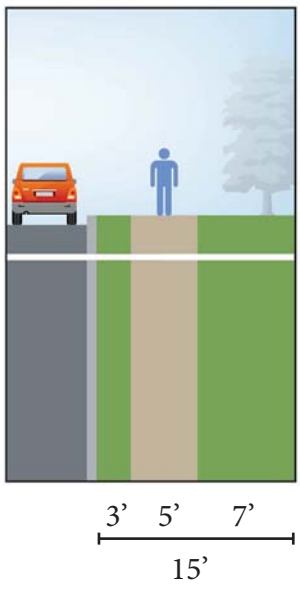
Suburban Arterial



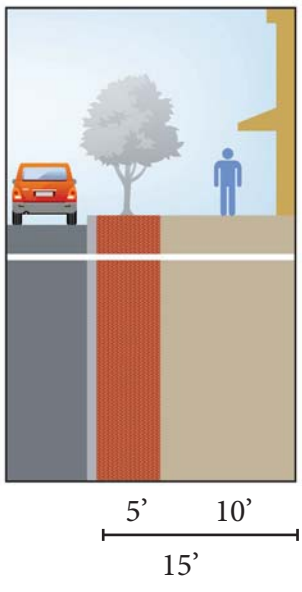
Urban Arterial



Suburban Collector



Urban Collector



Transit Integration

Longview Transit operates with both a fixed route service and a paratransit service. It uses 6 fixed routes with bus stops and 39 shelters. Longview Transit also uses a flag-stop system where users can hail the bus at any point along an existing route. Bus transit service along a corridor can be enhanced by both safety and operational improvements. It is possible for fixed-location bus stop infrastructure to be introduced in locations with a high number of passenger boardings as well as near major trip generators. Safety enhancements for riders may include sheltered waiting areas and lighting for increased visibility. A shelter is recommended at any stop with more than 25 boardings per day.

Pullout areas for buses along roadways may also be provided at designated stops to minimize traffic delays and reduce conflicts with vehicles approaching from behind. Pullout areas, or bus bays, are beneficial on roads with higher traffic volumes and traffic speeds. Bus stops can be more effective on the far-side of the signal at signalized intersections. This location benefits from signal timing gaps for the bus to re-enter the roadway and reduces delays from conflicts with right-turning vehicles on the near-side of the signal. Pullout areas also increase the safety of passengers entering and exiting the bus. Service ridership and efficiency can be improved with bus arrival displays and traffic signal priority to minimize overall travel times.

Barriers in getting to the transit route are one of the struggles that a number of riders face. The lack of pedestrian infrastructure along thoroughfares often increases the difficulty of using transit. It is important to integrate appropriate pedestrian infrastructure along transit corridors to encourage increased transit ridership.

LONGVIEW MPO
REGIONAL THOROUGHFARE PLAN

Longview MPO Thoroughfare Plan

The Longview MPO Regional Thoroughfare Plan consists of all major thoroughfares in the region by their assigned functional classification. This classification sets the required right-of-way to be acquired or preserved to accommodate future traffic demand in the region. The thoroughfare plan also identifies multi-modal elements to be considered along particular corridors in the region. It proposes alternative thoroughfare design elements to be incorporated in the retrofit or redesign as reconstruction is needed.

Roadway Design Recommendations

Roadway infrastructure recommendations come in two forms: design for reconstruction and new construction. Both formats are equally important.

A predetermined design of the roadway will allow for engineers, planners, developers and citizens to understand the overall look of a specific facility type. Roadway design will also influence the look and feel of other elements such as transit and non-motorized uses on the roadway and even the pedestrian realm.

The cross-sections described in the previous section (pages 23 - 26) portray the typical roadway design for each functional class type. If additional multi-modal elements are needed, the alternative standards can be adjusted based on recognized state and national design guidelines.

Pedestrian Design Recommendations

The incorporation of pedestrian infrastructure is an important element in the regional thoroughfare plan recommendations. Ensuring that pedestrian infrastructure such as sidewalks are included along all thoroughfare corridors within suburban and urban contexts is an essential part of the plan.

Transit Design Recommendations

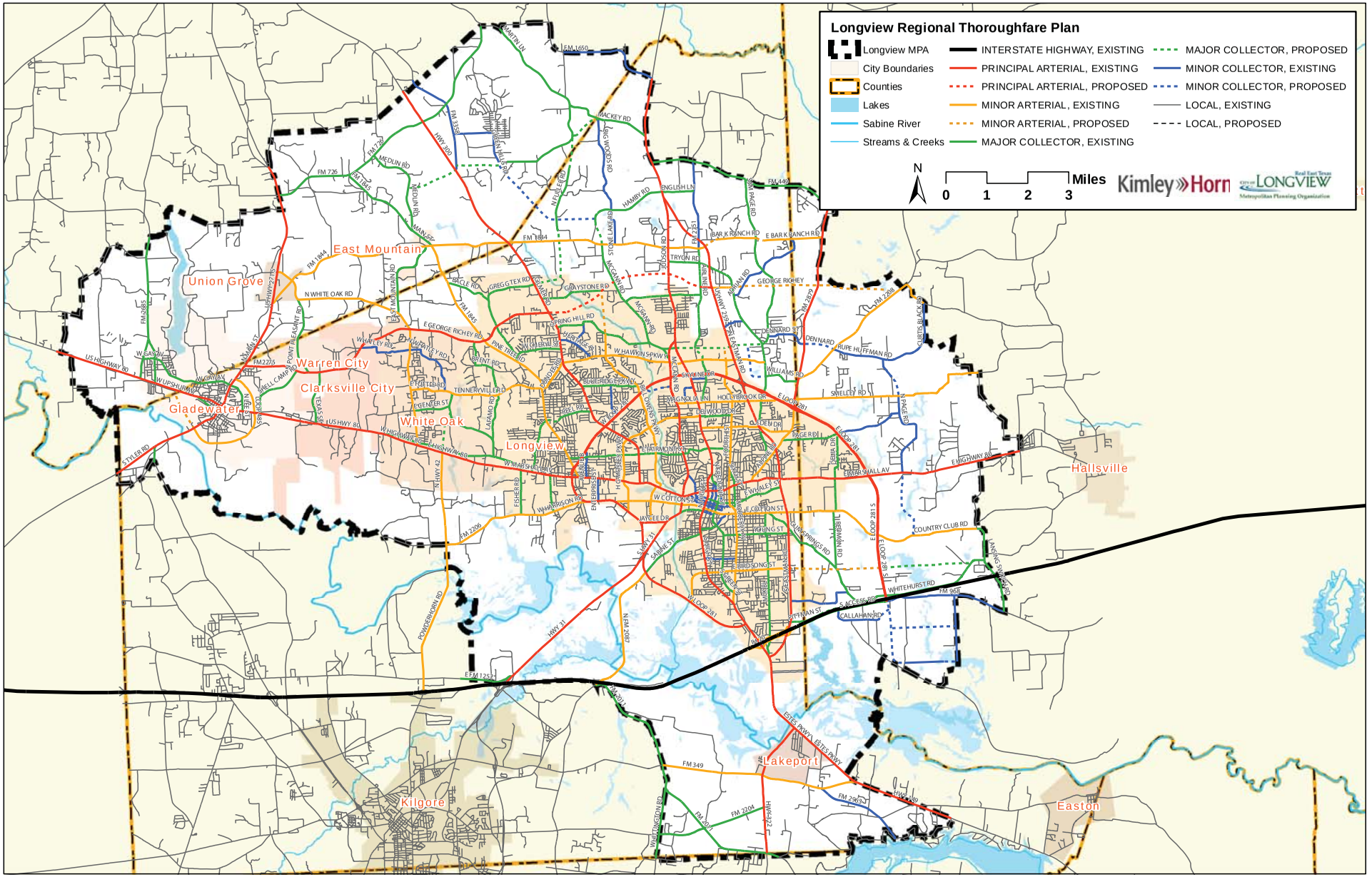
Longview Transit is the service provider for public transit in the urbanized area of the Longview region. Although routes can often change, it is important that the regional thoroughfare plan is consistent with the most recent Longview Transit routes and provides improved corridor recommendations for those routes.

Pedestrian access is the most essential element of transit service as it relates to transit design recommendations. Every transit rider is a pedestrian at some point along their trip whether that is walking to their bus stop, from the stop to their destination, or between destinations.

With this concept in mind it is easy to recognize the importance of planning for pedestrians in areas near transit stops. The safety of pedestrians boarding and alighting from the bus and walking to their destination is important. The infrastructure of the pedestrian realm should provide a buffer from motorized vehicles as well as safe and connected paths.

The following are transit corridors in the region:

- Estes Parkway
- High Street
- Mobberly Avenue
- Judson Road
- 4th Street
- Hawkins Parkway
- Gilmer Road
- Dundee Road
- Pine Tree Road
- Cotton Street
- Marshall Avenue (US 80)
- Alpine Road
- Eastman Road
- McCann
- W. Loop 281
- Harrison Road
- Green Street
- MLK Boulevard



Map of Longview MPO Thoroughfare Plan

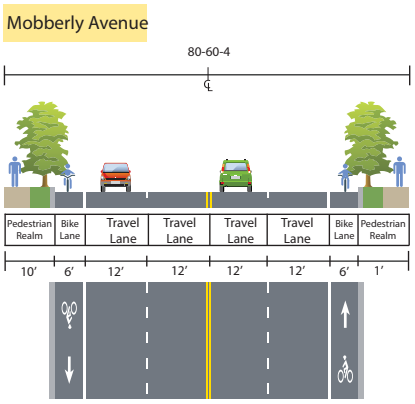
Bicycle Design Recommendations

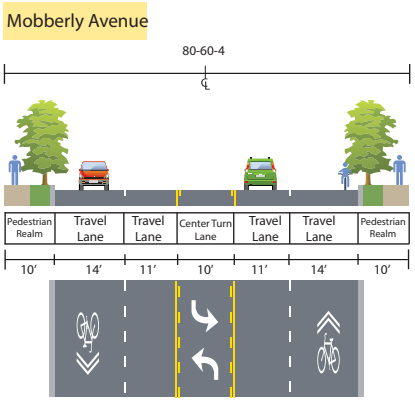
The ease of implementation of bicycle recommendations can vary depending on the project. Bicycle implementation can be as simple as restriping and currently under-utilized roadway to a complicated and expensive reconstruction of an existing roadway. It is also important to consider the roadways that are being newly constructed in suburban and rural locations for bicycle accommodation.

In the Longview region, there are a number of key corridors to consider for bicycle infrastructure implementation. The relative importance of each corridor depends on the cost and the desire by local officials and residents.

Mobberly Avenue, from Estes Parkway to E. Pacific Avenue

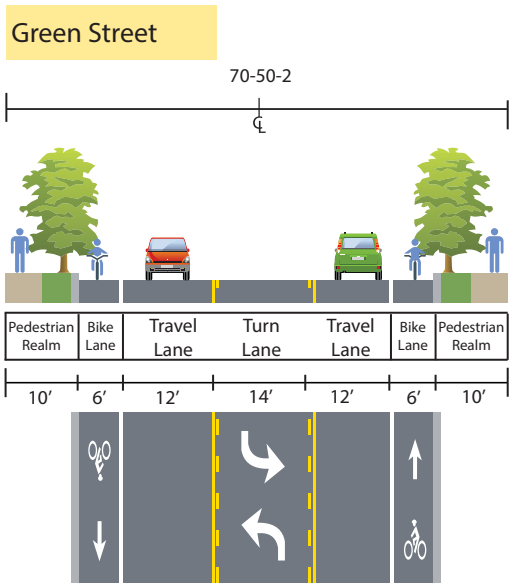
Mobberly Avenue is currently a minor arterial that connects southern Longview to the downtown area. It passes by Letourneau University and the Longview Amtrak Station as a four (4) lane roadway with a center turn lane. Model volumes along this corridor range from 12,300 and 22,900 for the forecast year of 2040. Currently the amount of right-of-way along the corridor is 80 feet. The recommended multi-modal cross section for this corridor can be found in the graphic below.





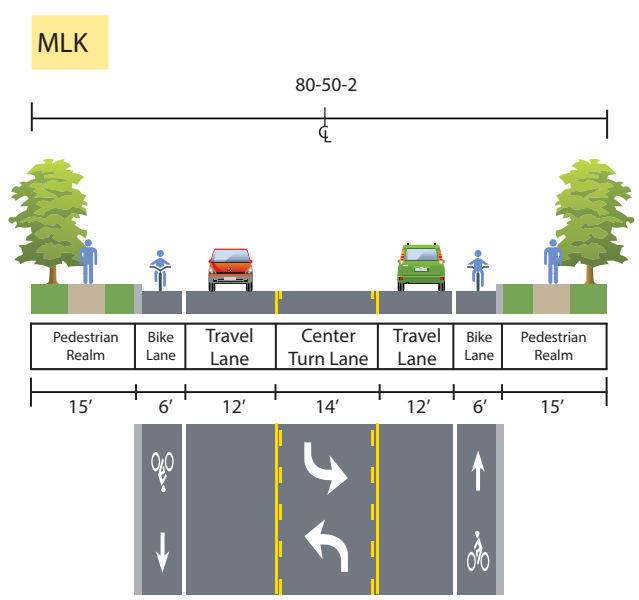
Green Street, from Mobberly Avenue to Cotton Avenue

Green Street is currently a major collector that connects southern Longview to the downtown area. It passes through primarily residential neighborhoods as it traverses from south to north. It is currently a four (4) lane undivided roadway. Model volumes along this corridor range from 5,100 and 11,300 for the forecast year of 2040. Currently the amount of right-of-way along the corridor varies between 50 and 80 feet. The recommended multi-modal cross section for this corridor can be found in the graphic below.



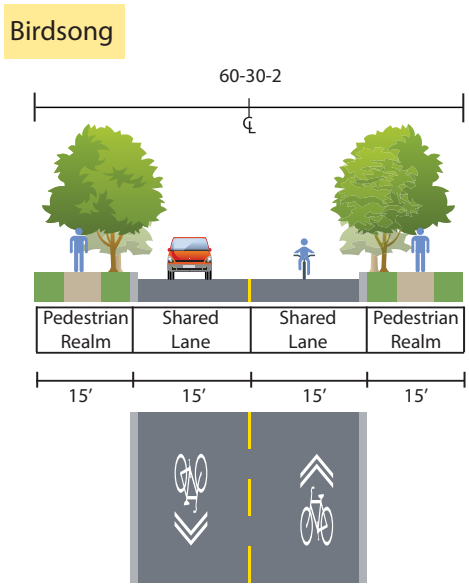
S Martin Luther King Jr. Boulevard, from IH 20 to Cotton Avenue

S. MLK Jr Boulevard is currently a major collector that connects southern Longview to the Cotton Avenue. It passes through primarily residential neighborhoods as it traverses from south to north. It is currently a four (4) lane undivided roadway. Model volumes along this corridor range from 5,400 and 9,500 for the forecast year of 2040. Currently the amount of right-of-way along the corridor is 80 feet. The recommended multi-modal cross section for this corridor can be found in the graphic below.



Birdsong Street, from Eastman Road to Loop 281

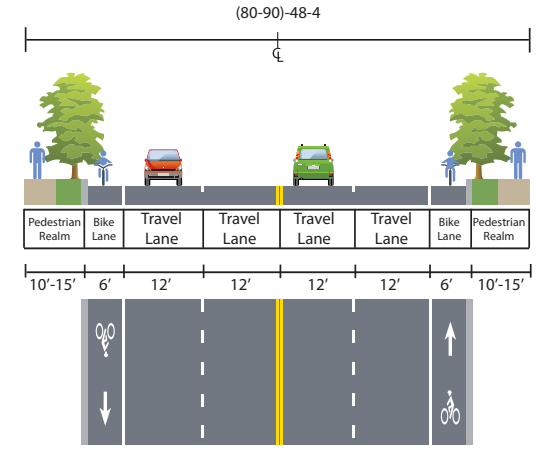
Birdsong Street is currently a minor arterial that connects southern Longview to the Cotton Avenue. It passes through primarily residential neighborhoods as it traverses from east to west. It is currently a two (2) lane undivided roadway. Model volumes along this corridor range from 4,000 and 6,800 for the forecast year of 2040. Currently the amount of right-of-way along the corridor is 60 feet. The recommended multi-modal cross section for this corridor can be found in the graphic below.



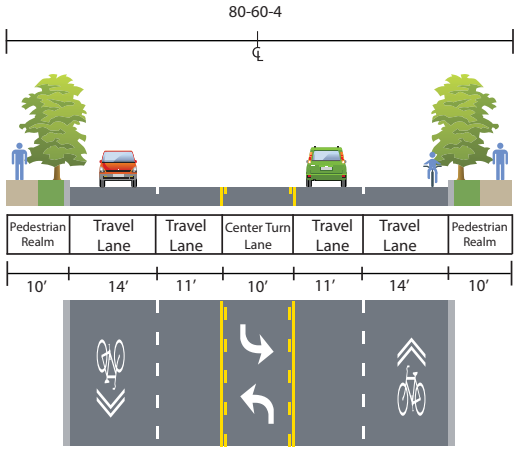
H.G. Mosley Parkway, from Judson Road to W Loop 281

HG Mosley Parkway is currently a minor arterial that connects southern Longview to the downtown area. It passes from the northern portion of Longview to the west as a four (4) lane roadway with a center turn lane. Model volumes along this corridor range from 6,100 and 22,200 for the forecast year of 2040. Currently the amount of right-of-way along the corridor varies between 80 and 100 feet. The recommended multi-modal cross section for this corridor can be found in the graphic below.

HG Mosley



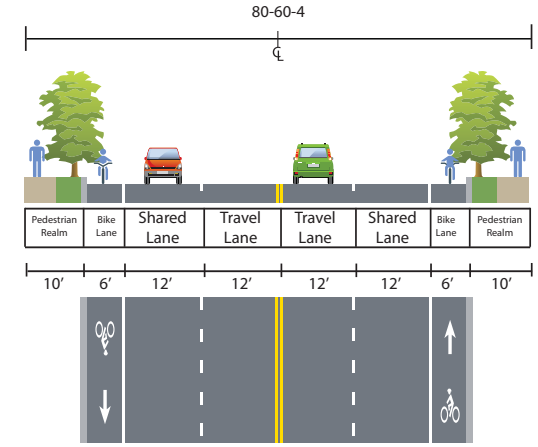
HG Mosley



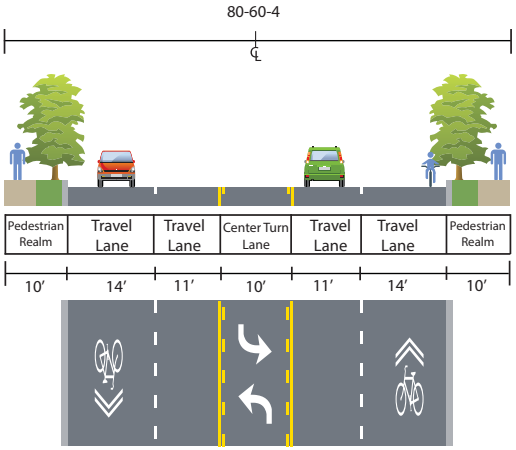
Pinetree Road, from Judson Road to W Loop 281 to Tenneryville Road

Pinetree Road is currently a minor arterial that connect Longview and the communities to the northwest. It passes from the northern portion of Longview to the west as a four (4) lane roadway with a center turn lane. Model volumes along this corridor range from 9,600 and 24,000 for the forecast year of 2040. Currently the amount of right-of-way along the corridor is approximately 80 feet. The recommended multi-modal cross section for this corridor can be found in the graphic below.

Pinetree



Pinetree



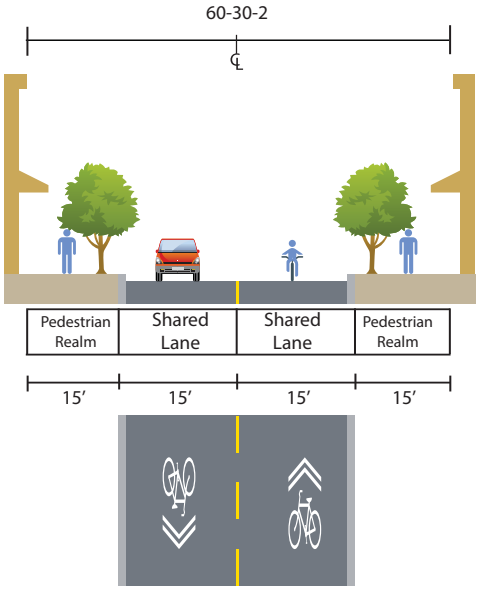
Downtown Minor Collectors

Many of the minor collectors in the downtown area of the City of Longview provide excellent connections for bicyclists to access north-south and east-west roadways. Volumes and speeds in the downtown area are low on the minor collectors and provide ability to include shared lanes. The recommended multi-modal cross sections for these corridors can be found in the graphic below.

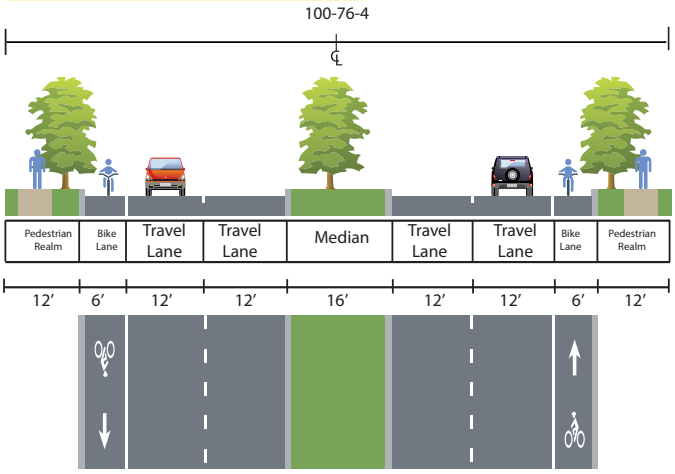
Minor Arterial, New Construction

With the widening or new construction of minor arterials, the opportunity will be present to include bicycle infrastructure. It may not be applicable in all situations, including bike facilities can help make important multi-modal connections in newly developed areas of the region. The recommended multi-modal cross sections for these corridors can be found in the graphic below.

Downtown Minor Collector



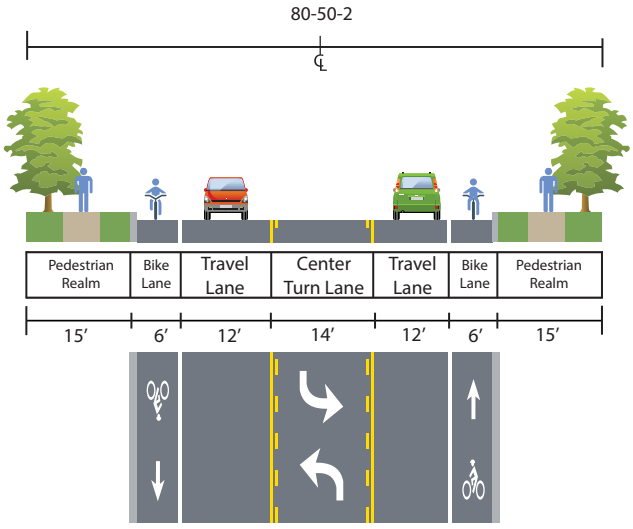
Minor Arterial New Construction



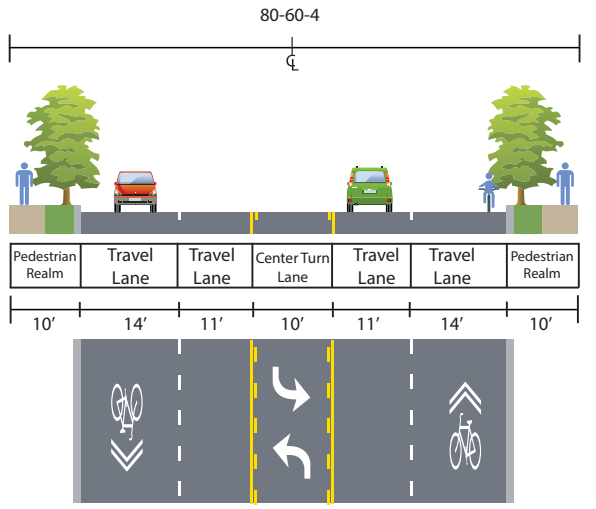
Major Collector, New Construction

With the widening or new construction of major collectors, the opportunity will be present to include bicycle infrastructure. It may not be applicable in all situations, including bike facilities can help make important multi-modal connections in newly developed areas of the region. The recommended multi-modal cross sections for these corridors can be found in the graphic below.

Major Collector New Construction



Major Collector New Construction



Minor Collector, New Construction

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Minor Collector New Construction